

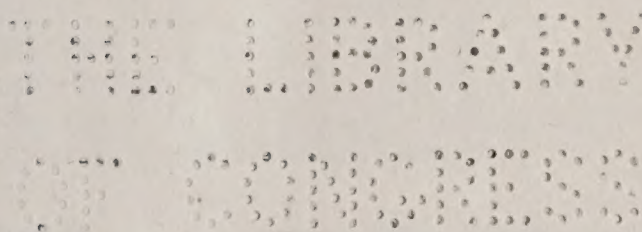


THE IMPERIAL ENCYCLOPEDIA AND DICTIONARY 260

A LIBRARY OF UNIVERSAL
KNOWLEDGE AND AN UN-
ABRIDGED DICTIONARY OF
THE ENGLISH LANGUAGE
UNDER ONE ALPHABET

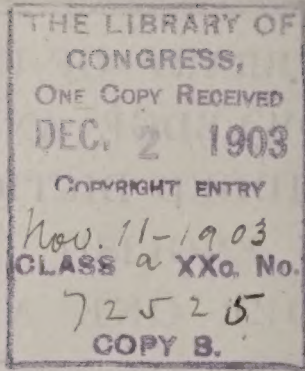
IN FORTY VOLUMES

VOLUME 20
INFANT—JOPPA



NEW YORK HENRY G. ALLEN & COMPANY

AES
I 34



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SCHEME OF SOUND SYMBOLS

FOR THE PRONUNCIATION OF WORDS.

Note.—(·) is the mark dividing words respelt phonetically into syllables; (ˈ), the accent indicating on which syllable or syllables the accent or stress of the voice is to be placed.

Sound-symbols employed in Respelling.	Representing the Sounds as exemplified in the Words.	Words respelt with Sound-symbols and Marks for Pronunciation.
ā	mate, fate, fail, aye	māt, fāt, fāl, ā.
ă	mat, fat	măt, făt.
â	far, calm, father	fâr, kâm, fâ'thēr.
ä	care, fair	cär, für.
aw	fall, laud, law	fawl, lawd, law.
ē	mete, meat, feet, free	mēt, mēt, fēt, frē.
ě	met, bed	mět, běd.
é	her, stir, heard, cur	hēr, stēr, hērd, kēr.
î	pine, ply, height	pīn, plī, hīt.
ï	pin, nymph, ability	pīn, nīm̃f, ä-bīl'î-tī.
ō	note, toll, soul	nōt, tōl, sōl.
ö	not, plot	nōt, plōt.
ô	move, smooth	mōv, smōth.
ö	Goethe (similar to e in her)	gō'téh.
ow	noun, bough, cow	noun, bow, kow.
oy	boy, boil	boy, boyl.
û	pure, dew, few	pūr, dū, fū.
ú	bud, come, tough	būd, kūm, tūf.
û	full, push, good	fúl, púsh, gúd.
ü	French plume, Scotch guid	plüm, güd.

ch...chair, match..... chär, mäch.

ch...German buch, Heidelberg,

Scotch loch (guttural)..... bôch, hī'dél-běrch, löch.

g....game, go, gun..... gām, gō, gūn.

j....judge, gem, gin..... jūj, jēm; jīn.

k....king, cat, cot, cut..... kīng, kăt, kōt, kūt.

s....sit, scene, cell, city, cypress..... sīt, sēn, sēl, sīt'î, sī'prēs.

sh...shun, ambition..... shūn, äm-bīsh'ün.

th...thing, breath..... thīng, brēth.

th...though, breathe..... thō, brēth.

z....zeal, maze muse..... zēl, māz, mūz.

zh...azure, vision..... äzh'ēr, vīzh'ün.

ABBREVIATIONS USED IN THIS WORK.

a., or adj......adjective
A.B......Bachelor of Arts
abbr......abbreviation, abbreviated
abl. or abla.ablative
Abp......Archbishop
abt......about
Acad......Academy
acc. or ac.accusative
accom......accommodated, accommodation
act......active
A.D......in the year of our Lord [*Anno Domini*]
Adj......Adjutant
Adm......Admiral
adv. or ad.adverb
A. F......Anglo-French
Ag......Silver [*Argentum*]
agri......agriculture
A. L......Anglo-Latin
Al......Aluminium
Ala......Alabama
Alb......Albanian
alg......algebra
A.M......before noon [*ante meridiem*]
A.M......Master of Arts
Am......Amos
Amer......America, -n
anat......anatomy, anatomical
anc......ancient, anciently
AN. M......in the year of the world [*Anno Mundi*]
anon......anonymous
antiq......antiquity, antiquities
aor......aorist, -ic
app......appendix
appar......apparently
Apr......April
Ar......Arabic
arch......architecture
archæol......archæology
arith......arithmetic
Ark......Arkansas
art......article
artil......artillery
AS......Anglo-Saxon
As......Arsenic
Assoc......Association
asst......assistant
astrol......astrology
astron......astronomy
attrib......attributive
atty......attorney
at. wt......atomic weight
Au......Gold [*Aurum*]

A.U.C......in the year of the building of the city (Rome) [*Annourbis condite*]
Aug......August
aug......augmentative
Aust......Austrian
A. V......authorized version [of Bible, 1611]
avoir......avoirdupois
B......Boron
B......Britannic
b......born
Ba......Barium
Bart......Baronet
Bav......Bavarian
bl.; bbl......barrel; barrels
B.C......before Christ
B.C.L......Bachelor of Civil Law
B.D......Bachelor of Divinity
bef......before
Belg......Belgie
Beng......Bengali
Bi......Bismuth
biog......biography, biographical
biol......biology
B.L......Bachelor of Laws
Bohem......Bohemian
bot......botany, botanical
Bp......Bishop
Br......Bromine
Braz......Brazilian
Bret......Breton
Brig......Brigadier
Brit......British, Britannica
bro......brother
Bulg......Bulgarian
bush......bushel, bushels
C......Carbon
c......century
Ca......Calcium
Cal......California
Camb......Cambridge
Can......Canada
Cant......Canterbury
cap......capital
Capt......Captain
Card......Cardinal
carp......carpentry
Cath......Catholic
caus......causative
cav......cavalry
Cd......Cadmium
Ce......Cerium
Celt......Celtic
cent......central
cf......compare [*confer*]
ch or chh......church

ABBREVIATIONS.

Chal.....	Chaldee	diff.....	different, difference
chap.....	chapter	dim.....	diminutive
chem.....	chemistry, chemical	dist....	district
Chin.....	Chinese	distrib..	distributive
Chron.....	Chronicles	div.....	division
chron.....	chronology	doz.....	dozen
Cl.....	Chlorine	Dr.....	Doctor
Class.....	Classical [= Greek and Latin]	dr.....	dram, drams
Co.....	Cobalt	dram.....	dramatic
Co... ..	Company	Dut. or D..	Dutch
co... ..	county	dwt.....	pennyweight
cog.....	cognate [with]	dynam or	
Col.....	Colonel	dyn.....	dynamics
Col.....	Colossians	E.....	Erbium
Coll.....	College	E. or e....	East, -ern, -ward
colloq.....	colloquial	E. or Eng..	English
Colo.....	Colorado	Eccl.....	Ecclesiastes
Com.....	Commodore	eccl. or	ecclesiastical [affairs]
com.....	commerce, commercial	eccles....	
com.....	common	ed.....	edited, edition, editor
comp.....	compare	e.g.....	for example [ex gratia]
comp.....	composition, compound	E. Ind. or	East Indies, East
compar...	comparative	E. I....	
conch.....	conchology	elect.....	electricity
cong.....	congress	Emp... ..	Emperor
Congl.....	Congregational	Encyc.....	Encyclopedia
conj.....	conjunction	Eng. or E..	English
Conn or Ct	Connecticut	engin.....	engineering
contr.....	contraction, contracted	entom....	entomology
Cop.....	Coptic	env. ext...	envoy extraordinary
Cor.....	Corinthians	ep.....	epistle
Corn.....	Cornish	Eph.....	Ephesians
corr.....	corresponding	Episc.....	Episcopal
Cr.....	Chromium	eq. or =...	equal, equals
crystal....	crystallography	equiv.....	equivalent
Cs.....	Cæsium	esp.....	especially
ct.....	cent	Est.....	Esther
Ct. or Conn.	Connecticut	estab.....	established
Cu.....	Copper [Cuprum]	Esthon....	Esthonian
cwt.....	a hundred weight	etc.....	and others like [et cetera]
Cyc.....	Cyclopedia	Eth.....	Ethiopic
D.....	Didymium	ethnog....	ethnography
D. or Dut..	Dutch	ethnol....	ethnology
d.....	died	et seq.....	and the following [et sequentia]
d. [l. s. d.]	penny, pence	etym.....	etymology
Dan.....	Daniel	Eur.....	European
Dan.....	Danish	Ex.....	Exodus
dat.....	dative	exclam....	exclamation
dau.....	daughter	Ezek.....	Ezekiel
D. C.....	District of Columbia	Ezr.....	Ezra
D.C.L.....	Doctor of Civil [or Common] Law	F.....	Fluorine
D.D.....	Doctor of Divinity	F. or Fahr.	Fahrenheit
Dec.....	December	f. or fem...	feminine
dec.....	declension	F. or Fr...	French
def.....	definite, definition	fa.....	father
deg.....	degree, degrees	Fahr. or F.	Fahrenheit
Del.....	Delaware	far.....	farriery
del.....	delegate, delegates	Fe.....	Iron [Ferrum]
dem.....	democratic	Feb.....	February
dep.....	deputy	fem or f..	feminine
dep.....	deponent	fig.....	figure, figuratively
dept.....	department	Fin.....	Finnish
deriv.....	derivation, derivative	F.—L.....	French from Latin
Deut.....	Deuteronomy	Fla.....	Florida
dial.....	dialect, dialectal	Flem.....	Flemish
diam....	diameter	for.....	foreign
Dic.....	Dictionary	tort.....	fortification
		Fr. or F...	French
		fr.....	from

ABBREVIATIONS.

freq.....frequentative
FrisFrisian
ft.....foot, feet
fut.....future
G. or Ger...German
GGlucinium
GaGallium
GaGeorgia
GaelGaelic
GalGalatians
galgallon
galv.....galvanism, galvanic
gard.....gardening
gen.....gender
Gen.....General
GenGenesis
gen.....genitive
Geno.....Genoese
geoggeography
geol.....geology
geom.....geometry
GerGerman, Germany
Goth.....Gothic
Gov.....Governor
govt.....government
GrGrand, Great
GrGreek
grgrain, grains
gramgrammar
Gr. Brit...Great Britain
Gris.....Grisons
gungunnery
HHegira
HHydrogen
h.....hour, hours
Hab.....Habakkuk
HagHaggai
H. B. M....His [or Her] Britan-
 nic Majesty
Heb.....Hebrew, Hebrews
her.....heraldry
herpet.....herpetology
Hg.....Mercury [*Hydrar-*
 gyrum]
hhd.....hogshead, hogsheads
Hind.....Hindustani, Hindu,
 or Hindi
hist.....history, historical
Hon.....Honorable
hort.....horticulture
HosHosea
Hung.....Hungarian
Hydros...Hydrostatics
IIodine
I.; Is.....Island; Islands
Icel.....Icelandic
ichth.....ichthyology
IdaIdaho
i.e......that is [*id est*]
IllIllinois
illus.....illustration
impera or
 impr.....imperative
impers.....impersonal
imp for imp imperfect
impf. p. or
 impimperfect participle
improp.....improperly
InIndium
ininch, inches
incept.....inceptive
IndIndia, Indian
IndIndiana

ind.....indicative
indefindefinite
Indo-Eur...Indo-European
inf.....infantry
inf or infin infinitive
instr.....instrument, -al
int.....interest
intens.....intensive
interj. or
 int.....interjection
interrog...interrogative pro-
 noun
intr. or
 intrans...intransitive
Io.....Iowa
Ir.....Iridium
Ir.....Irish
Iran.....Iranian
irr.....irregular, -ly
Is.....Isaiah
ItItalian
JanJanuary
Jap.....Japanese
Jas.....James
Jer.....Jeremiah
Jn.....John
Josh.....Joshua
Jr.....Junior
JudgJudges
K.....Potassium [*Kalium*]
K.....Kings [in Bible]
K.....king
Kan.....Kansas
Kt.....Knight
Ky.....Kentucky
L.....Latin
L.....Lithium
l. [l. s. d.], } pound, pounds
 or £..... } [sterling]
La.....Lanthanum
La.....Louisiana
Lam.....Lamentations
Lang.....Languedoc
lang.....language
Lap.....Lapland
latlatitude
lb.; llb. or } pound; pounds
 lbs...... } [weight]
Let.....Lettish
LevLeviticus
LG.....Low German
L.H.D......Doctor of Polite Lit-
 erature
Lieut.....Lieutenant
LimLimousin
LinLinnæus, Linnæan
litliteral, -ly
litliterature
Lith.....Lithuanian
lithog.....lithograph, -y
LL.....Late Latin, Low
 Latin
LL.D......Doctor of Laws
long.....longitude
Luth.....Lutheran
M.....Middle
M.Monsieur
mmile, miles
m. or masc masculine
M.A......Master of Arts
MaccMaccabees
machmachinery
Mag.....Magazine

ABBREVIATIONS.

Maj.....	Major	N. A., or	
Mal.....	Malachi	N. Amer.	North America, -n
Mal.....	Malay, Malayan	nat.....	natural
manuf.....	manufacturing, manufacturers	naut.....	nautical
Mar.....	March	nav.....	navigation, naval af- fairs
masc or m.	masculine	Nb.....	Niobium
Mass.....	Massachusetts	N. C. or	
math.....	mathematics, math- ematical	N. Car...	North Carolina
Matt.....	Matthew	N. D.....	North Dakota
M.D.....	Doctor of Medicine	Neb.....	Nebraska
MD.....	Middle Dutch	neg.....	negative
Md.....	Maryland	Neh.....	Nehemiah
ME.....	Middle English, or Old English	N. Eng....	New England
Me.....	Maine	neut or n..	neuter
mech.....	mechanics, mechan- ical	Nev.....	Nevada
med.....	medicine, medical	N.Gr.....	New Greek, Modern Greek
mem.....	member	N. H.....	New Hampshire
mensur....	mensuration	NHG.....	New High German [German]
Messrs. or		Ni ...	Nickel
MM.....	Gentlemen, Sirs	N. J.....	New Jersey
metal.....	metallurgy	NL.....	New Latin, Modern Latin
metaph....	metaphysics, meta- physical	N. Mex....	New Mexico
meteor....	meteorology	N. T. or	
Meth.....	Methodist	N. Test...	New Testament
Mex.....	Mexican	N. Y.....	New York [State]
Mg.....	Magnesium	nom.....	nominative
M.Gr.....	Middle Greek	Norm. F...	Norman French
MHG.....	Middle High Ger- man	North. E...	Northern English
Mic.....	Micah	Norw... ..	Norwegian, Norse
Mich.....	Michigan	Nov.....	November
mid.....	middle [voice]	Num.....	Numbers
Milan.....	Milanese	numis....	numismatics
mid. L. or }	Middle Latin, Me-	O.....	Ohio
ML.....	diæval Latin	O.....	Old
milit. or		O.....	Oxygen
mil....	military [affairs]	Obad.....	Obadiah
min.....	minute, minutes	obj.....	objective
mineral....	mineralogy	obs. or †	obsolete
Minu.....	Minnesota	obsoles....	obsolescent
Min. Plen..	Minister Plenipoten- tiary	O.Bulg....	Old Bulgarian or Old Slavic
Miss.....	Mississippi	Oct.....	October
ML. or }	Middle Latin, Me-	Odontog...	odontography
mid. L. ... }	diæval Latin	OE.....	Old English
MLG.....	Middle Low German.	OF or	
Mlle.....	Mademoiselle	O. Fr....	Old French
Mme.....	Madam	OHG.....	Old High German
Mn.....	Manganese	Ont.....	Ontario
Mo.....	Missouri	opt... ..	optics, optical
Mo.....	Molybdenum	Or.....	Oregon
mod.....	modern	ord.....	order
Mont.....	Montana	ord.....	ordnance
Mr.....	Master [Mister]	org.....	organic
Mrs.....	Mistress [Missis]	orig.....	original, -ly
MS.; MSS..	manuscript; manu- scripts	ornith....	ornithology
Mt.....	Mount, mountain	Os.....	Osmium
mus.....	music	OS.	Old Saxon
MUS.DOC...	Doctor of Music	O. T., or	
myth.....	mythology, mytho- logical	O. Test...	Old Testament
N.....	Nitrogen	Oxf.....	Oxford
N. or n....	North, -ern, -ward	oz.....	ounce, ounces
n.....	noun	P.....	Phosphorus
n or neut..	neuter	p.; pp....	page; pages
Na.....	Sodium [Natrium]	p., or part..	participle
Nah.....	Nahum	Pa. or Penn.	Pennsylvania
		paint.....	painting
		palæon....	palæontology
		parl.....	parliament
		pass.....	passive

ABBREVIATIONS.

pathol or
 path.....pathology
 Pb.....Lead [*Plumbum*]
 Pd.....Palladium
 Penn or Pa.Pennsylvania
 perf.....perfect
 perh.....perhaps
 Pers.....Persian, Persic
 pers.....person
 persp.....perspective
 pert.....pertaining [to]
 Pet.....Peter
 Pg. or Port.Portuguese
 phar.....pharmacy
 PH.D.....Doctor of Philoso-
 phy
 Phen.....Phenician
 Phil.....Philippians
 Philem.....Philemon
 philol.....philology, philologi-
 cal
 philos. { philosophy, philo-
 or phil... } sophical
 phonog.....phonography
 photog.....photography
 phren.....phrenology
 phys.....physics, physical
 physiol.....physiology, physi-
 ological
 Pied.....Piedmontese
 Pl.....Plate
 pl. or plu...plural
 Pl. D.....Platt Deutsch
 plupf.....pluperfect
 P.M.....afternoon [*post meri-
 diem*]
 pneum.....pneumatics
 P. O.....Post-office
 poet.....poetical
 Pol.....Polish
 pol econ...political economy
 polit.....politics, political
 pop.....population
 Port. or Pg.Portuguese
 poss.....possessive
 pp.....pages
 pp.....past participle, per-
 fect participle
 p. pr.....present participle
 Pr. or Prov.Provengal
 pref.....prefix
 prep.....preposition
 Pres.....President
 pres.....present
 Presb.....Presbyterian
 pret.....preterit
 prim.....primitive
 priv.....privative
 prob.....probably, probable
 Prof.....Professor
 pron.....pronoun
 pron.....pronunciation, pro-
 nounced
 prop.....properly
 pros.....prosody
 Prot.....Protestant
 Prov. or Pr.Provengal
 Prov.....Proverbs
 prov.....province, provincial
 Prov. Eng..Provincial English
 Prus.....Prussia, -n
 Ps.....Psalm, Psalms
 psychol....psychology

pt.....past tense
 pt.....pint
 Pt.....Platinum
 pub.....published, publisher,
 publication
 pwt.....pennyweight
 Q.....Quebec
 qt.....quart
 qtr.....quarter [weight]
 qu.....query
 q.v.....which see [*quod
 vide*]
 R.....Rhodium
 R.....River
 Rb.....Rubidium
 R. Cath....Roman Catholic
 rec. sec....recording secretary
 Ref.....Reformed
 refl.....reflex
 reg.....regular, -ly
 regt.....regiment
 rel. pro. or
 rel.....relative pronoun
 repr.....representing
 repub.....republican
 Rev.....Revelation
 Rev.....The Reverend
 Rev. V.....Revised Version
 rhet.....rhetoric, -al
 R. I.....Rhode Island
 R. N.....Royal Navy
 Rom.....Roman, Romans
 Rom.....Romanic or Ro-
 mance
 Rom Cath. { Roman Catholic
 Ch. or R. } Church
 C. Ch.... }
 r.r.....railroad
 Rt. Rev...Right Reverend
 Ru.....Ruthenium
 Russ.....Russian
 r.w.....railway
 S.....Saxon
 S.....Sulphur
 s.....second, seconds
 s. [l. s. d.]..shilling, shillings
 S. or s.....South, -ern, -ward
 S. A. or
 S. Amer..South America, -n
 Sam.....Samaritan
 Sam.....Samuel
 Sans, or
 Skr.....Sanskrit
 Sb.....Antimony [*Stibium*]
 s.c.....understand, supply,
 namely [*scilicet*]
 S. C. or
 S. Car...South Carolina
 Scand.....Scandinavian
 Scot.....Scotland, Scotch
 scr.....scruple, scruples
 Scrip.....Scripture [s], Scrip-
 tural
 sculp.....sculpture
 S. D.....South Dakota
 Se.....Selenium
 sec.....secretary
 sec.....section
 Sem.....Semitic
 Sep.....September
 Serv.....Servian
 Shaks.....Shakespeare
 Si.....Silicon

ABBREVIATIONS.

Sic.....	Sicilian	trigon.....	trigonometry
sing.....	singular	Turk.....	Turkish
sis.....	sister	typog.....	typography, typographical
Skr. or		U.....	Uranium
Sans.....	Sanskrit	ult.	ultimate, -ly
Slav.....	Slavonic, Slavic	Unit.....	Unitarian
Sn....	Tin [<i>Stannum</i>]	Univ.....	Universalist
Soc.....	Society	Univ..	University
Song Sol...	Song of Solomon	U. Presb...	United Presbyterian
Sp.....	Spanish	U. S....	United States
sp. gr.....	specific gravity	U. S. A....	United States Army
sq.....	square	U. S. N....	United States Navy
Sr.....	Senior	Ut.....	Utah
Sr.....	Strontium	V.....	Vanadium
....	Saint	v.....	verb
....	street	Va.....	Virginia
stat.....	statute	var.....	variant [word]
S.T.D.....	Doctor of Sacred Theology	var.....	variety of [species]
subj.....	subjunctive	Ven.....	Venerable
suf.....	suffix	Venet.....	Venetian
Su. Goth...	Suo-Gothic	vet....	veterinary
superl...	superlative	v. i. or	
Supp.....	Supplement	v. intr....	verb intransitive
Supt.....	Superintendent	vil.....	village
surg.....	surgery, surgical	viz.....	namely, to-wit [<i>vide-licet</i>]
Surv.....	surveying	v. n.....	verb neuter
Sw.....	Swedish	voc.....	vocative
Swab.....	Swabian	vol.....	volume
sym.....	symbol	vols.....	volunteers
syn.....	synonym, -y	Vt.....	Vermont
Syr.....	Syriac, Syrian	v. tr.....	verb transitive
t.....	town	W.....	Tungsten [<i>Wolfram</i>]
Ta....	Tantalum	W....	Welsh
Tart.....	Tartar	W. or w....	West, -ern, -ward
Te.....	Tellurium	Wal.....	Walachian
technol...	technology	Wall.....	Walloon
teleg.....	telegraphy	Wash.....	Washington
Tenn.....	Tennessee	Westph....	Westphalia, -n
term.....	termination	W. Ind. }	West Indies, West
terr.....	territory	or W. I.. }	Indian
Teut.....	Teutonic	Wis.....	Wisconsin
Tex.....	Texas	wt.....	weight
Th.....	Thorium	W. Va.....	West Virginia
theat.....	theatrical	Wyo.....	Wyoming
theol.....	theology, theological	Y.....	Yttrium
therap.....	therapeutics	yd.....	yard
Thess.....	Thessalonians	yr.....	year
Ti.....	Titanium	Zech.....	Zechariah
Tim.....	Timothy	Zeph.....	Zephaniah
Tit.....	Titus	Zn.....	Zinc
Tl.....	Thallium	zool.....	zoology, zoological
toxicol....	toxicology	Zr.....	Zirconium
tp.....	township		
tr. or trans.	transitive		
transl.....	translation, trans. lated		

See also ABBREVIATIONS in Vol. I

IMPERIAL ENCYCLOPEDIA AND DICTIONARY.

INFANT, in Law : in general, a person, male or female, under 21 years of age. In various countries, special statutes designate ages within 21 years when males and females may lawfully perform specified acts—thus, heirs-apparent to royal crowns are declared to be of full age to assume public functions when 10, 12, 15, or 18 years old; a male attains the period of discretion and may choose a guardian, make a will, or annul a previous marriage contract, at 14; a female may be betrothed or given in marriage at 7, is entitled to dower at 9, may consent or disagree to marriage at 12, and may act as executrix at 17; and in some places a female becomes of lawful age at 18. In general, the contracts an infant may make are not binding upon him, excepting contracts for personal necessities; and the doctrine of estoppel is inapplicable to him. While the law throws about an infant a protection against improvident contracts, it will not sanction his injuring others on the ground of his infancy. Hence he is held responsible for certain wrongful acts (*torts*), as for slander, trespass, and some degrees of fraud. The usual rule governing the liability of infants to punishment for crime is that no infant under 7 years of age can be deemed guilty of felony or be punished for any capital offense, for it is presumed, and no averment is entertained against the presumption, that prior to that age he cannot become endowed with discretion. But on reaching the age of 14, this legal incapacity terminates. Between 7 and 14 years it is held that malice prompts crime, not the usual impulses of mature years. Instead of consigning infants in law to capital and penitentiary punishment, as of old, modern procedure recognizes a more humanitarian spirit, and co-operates with benevolence in trying to save the youthful wrong-doer by correctional and reformatory treatment. As vexatious litigations have frequently characterized the question of fact as to the exact time when a person becomes legally of age, it is now quite generally held by the courts that a person becomes 21 years old the first moment of the day before the anniver-

INFANTICIDE.

sary of his birth. This rule is observed also in the case of a male wishing to vote at an election held the day preceding the 21st anniversary of his birth. See EQUITY, COURTS OF: GUARDIAN, in Law: MARRIAGE: PARENT AND CHILD.

INFANTICIDE, n. *in-făn'ti-sid* [Fr. *infanticide*—from L. *infantem*, very young; L. *cædo*, I kill]: act or practice of murdering infants; abhorrent to modern civilization, but common in ancient times, and now prevalent among many barbarous nations. It prevailed in Greece and Rome, and (such is the force of custom) found defenders even in Plato and Aristotle. The latter, in his *Politics*, says the law should forbid the nurturing of the maimed, and, where a check to population is required, abortion should be produced before the quickening of the infant. In Sparta, we are informed that when a child was born the law directed the father to carry it to an appointed place, to be inspected by the elders of the community. If they perceived that its limbs were straight, and its look was wholesome, they returned it to its parents to be educated; otherwise, it was thrown into a deep cavern at the foot of the mountain Taygetus; and it was said this law had a wholesome effect, for it made women with child very careful as to their eating, drinking, and exercise, and hence they proved excellent nurses. In the other Grecian republics, a similar disregard of the life of sickly infants was shown. With regard to the practice among the Romans, little definite information exists, though learned authors discuss it at great length. It seems certain that it lay with the Roman father to say whether his child should be permitted to live or not. The exposure of infants, indeed, was the rule rather than the exception in most countries in ancient times. Among the Norse, the child's life always hung in the balance till the father handed it to the nurse to be reared; if, on account of its being weak, or a daughter, he disapproved of its living, it was exposed to die by wild beasts or the weather. In modern times the practice is cruelly common among certain peoples. Child-murder prevails to a great extent throughout the South Sea Islands. Among the Fijians it was a system until the recent introduction of Christianity. A recent authority says that in Vanua Levu, in some parts, 'the extent of infanticide reaches nearer two-thirds than a half.' Among the Hindus, the practice of destroying children, especially females, prevailed frightfully, till it was checked in the time of the Marquis of Wellesley's rule. The Rajpûts, it is said, destroy all female children but the first born—a peculiar custom, due to its being a point of honor with a Rajpût to nearly ruin himself in the marriage feast and portion of his daughter, so that he could not afford to have more than one. The Mohammedans were inclined to the same practice, but effected their object chiefly by means of abortion. In New Holland, the native women have no hesitation in destroying, by compression, the infant in the womb, to avoid the trouble of rearing it alive. In China, I. is supposed to be common, the chief cause being said to be the right of periodically repudiating their wives, which is

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possessed by Chinamen. Some statistics published some time ago in a well-known French paper indicate the fearful extent to which life is lost through this practice prevailing in so vast a population as that of China. In all the cases above cited, it may be assumed there was no feeling of I. being wrong or criminal. In some, it was owing to religious feeling of a perverted kind; in some, to the difficulty of living; but in many, as among the Fijians, it appears that the mother killed her child often from whim, anger, or indolence.

Christian civilization deals very strictly with this subject; for one of its maxims is that human life, from its first to its last instant, is sacred, and whoever wilfully puts an end to it is a murderer, or a criminal of the same category. Instead of encouraging the destruction of life, modern civilization abounds in every kind of machinery for preserving it, however unsuccessful the attempt. The chief cause which now leads to I. is shame, operative only in the case of the child being illegitimate: parents incur the risk of committing the crime of murder to avoid social disgrace. Therefore, to appreciate the force of the checks put by the law on the tendency to I., the law of bastardy (q.v.), the practice of instituting foundling-hospitals (q.v.), and the kind and degree of the punishments attending any attempt more or less direct to destroy the child either before or after birth, require to be taken into account.

The criminal law deals with the cognate offenses which make up I. in the following manner, whether the child is legitimate or illegitimate: As regards the procuring of abortion, every woman who takes poison or other noxious thing, or uses instruments or other means, to procure her miscarriage, is guilty of a crime; so is any person who administers poison or uses instruments upon the woman with such intent, also any person who supplies drugs, poison, or instruments for the same purpose. See ABORTION (in criminal law). The concealment of birth also is made a criminal offense. Whoever, after a child is born, by any secret disposition of the body, endeavors to conceal its birth, is guilty of a misdemeanor. This is the offense which is most frequently made the subject of prosecution in such cases, as the attempt to establish the larger crime of murder to the satisfaction of a jury is frequently foiled by a secret sympathy toward the mother, who is presumed to have been the victim of seduction, or otherwise wronged. The existence of this offense shows the necessity for every woman about to become a mother to make known her situation to some extent. As the destruction of children may be effected by the negative fact of not supplying food and clothing, as well as by the positive act of wounding or ill-treating, the refusal or neglect of a parent or other person bound by law to supply food and clothing to the child, and who by such neglect causes its death, amounts either to murder or manslaughter, according to the circumstances. Moreover, the unlawful abandoning or exposure of any child under the age of two years whereby the life and health of the child are endangered

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is a misdemeanor. Where a person is charged with the murder of a very young child, it is essential to prove that the child was in life. The test of this is not that it breathed, or had an independent circulation after it was separated from the mother, but it is enough that the child was fully born; hence, if a man strike a woman with child, so as to cause the death of the child, he is neither guilty of murder nor of manslaughter of the child. The judges of England, 1848, had to deliberately consider whether, though a child was still attached to the navel-cord, the killing of it was murder; and they held that it was. In all cases of the murder of infants, the question whether the child was fully born, and so the subject of murder, is generally one of medical jurisprudence, on which medical skill is needed to throw light, and medical men have well-known tests for ascertaining this important fact. Even when the act of I.—not being the result of the mother's ignorance—may fairly be regarded as a crime, its enormity is in some instances lessened in the eye of the law by the consideration of the physical condition and moral disturbance of the parent

INFANTRY, n. *in'făn-trĩ* [F. *infanterie*, foot-soldiers—from *enfant*, an infant, a young man: It. *infanteria*, foot-soldiers—from *fante*, a serving-man]: in *OE.*, the servants of the knights—so named because they walked on foot: foot-soldiers of an army as distinguished from cavalry; but not including engineers and army service-corps men, though these are not mounted. Among semi-barbarous nations, fighting on foot has always been considered less advantageous than fighting on horseback or in chariots; but as war has become a science, the principal strength of armies is found to be in their infantry: see **ARMIES**: **TACTICS**: **WAR**: **UNITED STATES ARMY**: **ETC.**

INFANT SCHOOL: school for training of very young children. Oberlin (q.v.), pastor of Waldbach, in France, may be regarded as the founder of such schools. He appointed women in his own parish to assemble the little children between the ages of two and six, his object being to interest them by conversation, pictures, and maps, and to teach them to read and to sew. The first I. S. in Britain was in connection with Robert Owen's socialistic establishment in Scotland; it was taught by James Buchanan. In 1819, Lord Brougham and Lord Lansdowne procured the starting of one in London. One of the first teachers was Wilderspin, whose methods, based on the Pestalozzian system, were further matured by the Home and Colonial I. S. Soc., founded 1836, which trains teachers and institutes model infant and juvenile schools. Institutions of this class have never become numerous in Great Britain. Too much has frequently been attempted in the way of direct instruction. In Germany, under the names of *Kleinkinderschulen* and *Kindergärten*, schools for very young children are numerous. In France, under the name of 'Asylums,' they are very widespread. In the United States, the Kindergarten system has found great

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favor, and infant schools using that method have been multiplied in recent years. See KINDERGARTEN: FRÖBEL, FRIEDRICH WILHELM AUGUST.

Infant schools ought to keep in view the various departments of the child's mind, and appeal to its different faculties in turn. But while the intellect, the moral nature, and the imagination ought to receive their proper food, the physical nature, and that love of play and fun connected with it, and which is appropriate to infancy, should have special attention. In the play-ground, open or covered, order, obedience, kindness, consideration, civility, cleanliness, good-temper, are to be taught, and thus some *moral* objects of the infant school attained. Play, and the moral training which may be connected with it, should be the leading ideas of the place. The elements of reading should be taught, but with such methods and books as call for the minimum of mental exertion. An infant school which has cultivated the moral nature of its children through games and exercises, and has taught them to read easy monosyllabic sentences by the time they reach the age of six, has done its work well. Songs, rhymes, simple narratives, object-lessons, dialogues in which the children are led to report what they have seen of interest, and similar expedients may be used to arrest attention, stimulate the perceptive faculties, and awaken the intelligence. Everything in this process depends on the personal qualities of the teacher.

The question remains whether infant schools are desirable at all, and whether the family, and the fields, or the streets, do not constitute the best, because nature's infant school. The answer given by many would be that, were society in a normal condition, infant schools, even the best, would be hurtful. But we are *not* in a normal state; and though infant schools may be superfluous in some rural places, they may be greatly useful in populous towns.

INFATUATE, *v.* *in-făt'û-ât* [L. *infatûātus*, made a fool of—from *in*, in; *fatûūs*, foolish: It. *infatuare*: F. *infatuer*]: to make foolish; to inspire with an extravagance, or with a foolish passion beyond the control of reason. INFAT'UATING, *imp.* INFAT'UATED, *pp.*: ADJ. affected by extreme folly; exhibiting a total want of prudence or judgment in the affairs of life. INFAT'UATION, *n.* *-ā'shŭn* [F.—L.]: a state of mind in which a person conducts himself without judgment, or contrary to reason—generally, or in regard to particular objects.—SYN. of 'infatuate': to besot; stupefy; mislead.

INFECT, *v.* *in-fěkt'* [F. *infect*, corrupt, infected; *infector*, to infect—from L. *infectus*, tainted, dyed—from *in*, in; *făciō*, I make]: to taint with disease; to corrupt; to communicate bad qualities to. INFECT'ING, *imp.* INFECT'ED, *pp.*: ADJ. tainted or corrupted, as by the communication of disease. INFECT'ER, *n.* *-ēr*, one who. INFEC'TION, *n.* *-fěk'shŭn* [F.—L.]: the act by which poisonous matter or exhalations produce disease in a healthy body; that which taints or corrupts, as by communication from

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one to another. INFEC'TIOUS, a. -shŭs, having the quality of infecting; contaminating; apt to spread. INFEC'TIOUSNESS, n. -nēs, quality of being capable of communicating disease. INFEC'TIOUSLY, ad. -lŭ. INFEC'TIVE, a. -tĭv, able or tending to taint with noxious matter or bad qualities. *Note.*—*Contagion* and *contagious* are used properly with respect to things which spread by contact or imitation—*infection* and *infectious* are generally restricted to a more hidden and diffusive power conveyed by the atmosphere; though this distinction is not always observed: an *epidemic disease* is a disease universally prevalent in a country or district; *endemic disease*, a disease due to local conditions, and restricted to a limited district.—SYN. of 'infect': to poison; defile; vitiate; pollute.

INFEC'TIOUS DISOR'DERS, in Cattle: subject of special enactment, for protection of the public. The laws vary in different states; but it is usual to authorize inspectors to be appointed with power to enter cow-sheds and stables, and report if disease exists. Sometimes sound cattle that have been exposed are required to be slaughtered.

Penalties are imposed for turning out diseased cattle on unclosed lands or in markets, for not purifying sheds, for not disinfecting railway cattle-trucks and steamboats. The owner is bound to give notice to the inspector of any symptoms of disease appearing; and the hay, straw, litter, or dung of infected animals cannot be lawfully removed except for the purpose of being destroyed, and with an inspector's license.

INFECUND, a. ĭn-fĕk'ŭnd [L. *infĕcun'dus*, unfruitful—from *in*, not; *fĕcun'dus*, prolific]: unfruitful; not producing young. INFECUNDITY, n. ĭn'fĕ-kŭn'dĭ-tĭ, unfruitfulness.

INEFFMENT, n. ĭn-fĕf'mĕnt, or INFECT'MENT, n. [*in*, *intc*, and *feoffment*—from F. *fieffer*, to convey the *fief* or *fee* to a new-comer (see FIEF and FEE)]: in *Scot.*, the act of completing the title to land, etc., by giving symbolical possession of heritable property, the evidence of which is an instrument of sasine; the placing in possession of a fee or freehold estate. INEFF, or INFEOFF, v. ĭn-fĕf', and INFECT', v.: see ENFEOFF.

INFELICITOUS, a. ĭn'fĕ-lĭs'ĭ-tŭs [*in*, and *felicitous*]: unhappy; not prosperous. INFELIC'ITY, n. -ĭ-tĭ [F. *infĕlicitĕ*—from L. *infelĭcĭtātĕm*, ill-luck]: unhappiness; unfortunate state.

INFELT, a. ĭn-fĕlt' [*in*, *in*, and *felt*]: felt deeply.

INFER, v. ĭn-fĕr' [F. *infĕrer*, to infer—from L. *inferrĕ*, to bring or carry into—from *in*, into; *fĕrō*, I bear or carry—*lit.*, to bear or carry into]: to deduce as a fact or consequence; to assume or draw, as a conclusion, from general facts. INFER'RING, imp. INFERRED', pp. -fĕrd'. INFER'ABLE, a. -ă-bl, or INFER'RIBLE, a. -rĭ-bl, that may be inferred or deduced from premises. INFERENCE, n. ĭn'fĕr-ĕns, a conclusion drawn from previous arguments; a truth or proposition drawn from another truth or proposition

INFERIOR—INFIDEL.

which has been admitted, or which is supposed to be true. IN'FEREN'TIAL, a. -ĕn'shāl, deducible by inference. IN'FEREN'TIALLY, ad. -shāl-lĭ, by way of inference.—SYN. of 'inference': conclusion; deduction; induction; consequence.

INFERIOR, a. ĭn-fĕ'rĭ-ēr [L. *inferiōr*, or *infĕriōrem*, lower—from *infĕrus*, beneath, below: F. *infĕrieur*]: lower, as in station, rank, age, condition, excellence, or value; of second-rate quality; not the best; subordinate; in *bot.*, applied to the ovary or fruit when it seems to be situated below the calyx, and to the part of a flower farthest from the axis: N. one who is in a lower station or rank from another. INFE'RIOR'ITY, n. -ōr'ĭ-tĭ, a lower state of dignity, age, etc., than another. INFERIOR is often used to qualify scientific terms, indicating 'below, lower, inner,' and opposed to *superior*, which indicates 'above, upper, outer.' INFE'RIOR EXTREMITIES, the legs, as the lower parts of the body. INFERIOR TIDE, the tide which occurs at any place when the moon is below the horizon. THE INFERIOR PLANETS, those whose orbits are within that of the earth.—SYN. of 'inferior': second; secondary; minor; lower; less; below; younger.

INFERNAL, a. ĭn-fĕr'nāl [F. *infernal*—from mid. L. *infernālĭs*—from L. *infer'ni*, those below—from *infer'nus*, lying below: It. *inferno*, hell; *infernale*, pertaining to hell]: pertaining to the lower regions; pertaining to hell; hellish; diabolical; fiendish. INFERNALLY, ad. -lĭ.—SYN. of 'infernal': Tartarean; satanic; malicious; Stygian; devilish.

INFERO-BRANCHIATE, a. ĭn'fĕr-ō-brāŋg'kĭ-āt [L. *infĕrus*, below; Gr. *branchiā*, gills]: having the gills arranged along the sides of the body under the margin of the mantle—applied to an order of gasteropodous mollusks.

INFERRED, INFERRING, INFERRIBLE: see under INFER.

INFERTILE, a. ĭn-fĕr'tĭl [L. *in*, not; *fĕrtilĭs*, fruitful]: not fruitful or productive; barren; INFERTILELY, ad. -lĭ. IN'FERTIL'ITY, n. -tĭl'ĭ-tĭ, barrenness; unproductiveness.

INFEST, v. ĭn-fĕst' [F. *infester*—from L. *infestāre*, to trouble or vex—from *infestus*, made unsafe, hostile: It. *infestare*]: to trouble greatly; to disturb; to harass; to annoy by presence and numbers, as vermin: ADJ. in *OE.*, hurtful, dangerous. INFEST'ING, imp. INFEST'ED, pp.

INFEUDATION, n. ĭn'fū-dā'shŭn [L. *in*, into; mid. L. *feudum*, the property in land distributed by William the Conqueror to his followers: AS. *feoh*, cattle, riches (see FEE)]: the act of putting into possession of an estate or fee; the granting of tithes to laymen.

INFIDEL, n. ĭn'fĭ-dĕl [F. *infidèle*—from L. *infĭdĕlĭs*, not trustworthy—from *in*, not; *fĭdĕlĭs*, faithful: It. *infidele*]: an unbeliever; one who does not believe in the Bible as a revelation from God, or in the divine origin of Christianity;

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one not of the faith—applied by Mohammedans to Christians, and *vice versâ*; applied sometimes to a skeptic or mere doubter concerning the Christian facts.—See FREETHINKERS: SKEPTICISM: DEISM: AGNOSTICISM: ATHEISM: ETC. ADJ. unbelieving; skeptical. INFIDEL'ITY, n. -dêl'î-tî [F. *infidélité*]: disbelief in revealed religion; unfaithfulness in married persons; breach of trust; treachery.—SYN. of 'infidel n.': unbeliever; deist; atheist; freethinker.

INFILTRATE, v. *în-fîl'trât* [F. *infiltrer*, to infiltrate: *în*, into, and Eng. *filtrate*: F. *filtrer*, to filtrate]: to enter into a substance through means of its pores. INFIL'TRATING, imp. INFIL'TRATED, pp. INFILTRA'TION, n. -trâ'-shùn, [F.—L.]: the act or process of passing into the pores or textures of a body; the liquid or substance which has so entered.

INFINITE, a. *în'fî-nît* [L. *infinītus*, boundless, unlimited—from *în*, not; *finītus*, ended or finished; *fīnis*, an end: It. *infinito*; F. *infini*, infinite]: without limits; unbounded; endless; perfect, as applied to God; immense; very large: N. that which is infinite; a boundless space or extent; the Almighty. INFINITELY, ad. -lî. INFINITESIMAL, a. *în'fî-nî-tês'î-mâl* [F.]: infinitely small: N. an infinitely small quantity. INFIN'ITIVE, a. -î-tiv [F. *infinitif*—from L. *infinītivus*]: denoting that part of a verb which expresses the action without the limitation of person or number, as *to run* (see VERB). INFIN'ITIVELY, ad. -lî. INFIN'ITY, n. -î-tî [F. *infinité*]: unlimited extent of time, space, or quantity; immensity. INFIN'ITUDE, n. -tûd, state of being without limits; boundless number; infinity. INFINITE DECIMAL OR SERIES, one which cannot be brought to an end. INFINITESIMAL CALCULUS: see CALCULUS.—SYN. of 'infinite a.': boundless; unlimited; limitless; illimitable; immeasurable; interminable.

INFINITE: term concerning which there has been much controversy. Some hold that there corresponds to Infinity a distinct notion, which we are entitled to entertain and reason about, with the same confidence that we discuss measured intervals, as a yard or mile; while others maintain that the word is a name for a mere negative, amounting to a denial of all limits or bounds. Sir William Hamilton goes so far as to say that 'the Infinite and the Absolute are only the names for two counter-imbecilities of the human mind, transmuted into properties of the nature of things—of two subjective negatives converted into objective affirmatives' (*Discussions*, p. 21). John Stuart Mill holds a similar view. It had been maintained also by Locke that we have no positive idea of the I., that it was only the negative of an end or termination (*Essay on the Understanding*, book ii. chap. 17).

The notion of the I. has, indeed, been admitted into mathematical reasoning, a circumstance that seems to imply that we could use it with exactness, and, consequently, it could not be altogether an incompetence or imbecility of the understanding. But, to this it is replied that mathematicians use the word under peculiar restrictions. They

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employ it in the two extremes of the infinitely great and the infinitely little. 'If we see a conclusion, which we can nearly attain by the use of a large magnitude, more nearly by the use of a larger, and so on without limit, that is to say, as nearly as we please, if we may use a magnitude as large as we please, but which is never absolutely attained by any magnitude however great, then such conclusion may be said, for abbreviation, to be absolutely true when the magnitude is infinite' (*Penny Cyc.*, art. 'Infinite'). The very same statement might be made regarding the infinitely small, which is represented in mathematics by the symbol for nothing, though it is not the same as nothing in the strictest sense, namely, the nothing caused by subtracting a quantity from itself, as two from two. It is nothing in this sense, that if added to a finite quantity, as 10, it produces no augmentation that can be made use of; the quantity for all purposes remains the same. The machinery of I. quantities has a large part in the higher mathematics, and is introduced to compare two things naturally incommensurate. Thus, in estimating the area of a curved surface such as a circle, in straight-lined spaces, e.g., sq. inches, the difficulty was surmounted by a sort of fiction, namely, by supposing the circle to be inscribed by a right-lined figure or polygon, of such a very great number of sides that they coincide to all intents and purposes with the curved circumference. The coincidence can never be perfect; but by imagining the sides to be smaller and smaller, and, consequently, more and more numerous, the difference between the polygon and the circle may become less than any assignable quantity, or, as it may be said, infinitely little, practically the same as nothing, so that the estimate of the area of the one will stand for the estimate of the area of the other. This device for overcoming the natural incommensurability of straight and curved, and of number and motion, is the real occasion of the mathematical use of the term in question, which use therefore may be said to be not an adequate evidence (though it certainly is an intimation), that the term infinite expresses a positive conception of the mind.

The existence of the I. as a positive conception, however, depends on no such evidence. If evidenced at all, it will be first from a sphere other than the mathematical or the material; though intimations continually presenting themselves in these departments will be found to accord with the fact of such a conception as actually reached and rested in by the mind. These intimations are illustrative of it, and they add to its certainty. The I. is a positive reality to the mind, because the mind, whenever awakened to deal with the problem of the universe, *cannot conceive of the infinite as not existing*.

When it is asserted that the I. is not a 'positive conception,' what is meant is merely that it is not an *experience*. It is said that the I. is the mere negation of the finite, this is an assertion without proof; but even if it be granted, the I. is no more the negation of the finite than cold is the negation of heat. Indeed, no man knows any more than this

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about the nature of cold; yet this fact in no degree invalidates cold as a reality as well as a positive mental conception of a reality.

Space and duration—whatever may be our philosophy about them—are at least positive conceptions in the human mind; but they necessitate the conception of the infinite, inasmuch as no proper thinking can conceive of them as bounded or terminable in any direction.

Some philosophers assign the conception of the I. to man's intuitive beliefs. Another class, declining to claim it as a direct intuition of the mind, assert that it is a conception which inevitably arises in the mind from the perception of the finite. Not entering into this question of philosophy, we have grounds for the assertion that, by one or another process, the I. exists as a positive conception in the human mind. The arguments to the contrary seem to leave unnoticed the fact that the I. *is present* to the human mind; and to content themselves with profound reasonings to show that the I. has no power or right thus to affirm itself positively to man. Though it were, as is asserted by some, a mere negation, it would not thereby lose its character of positiveness, since positive and negative are terms only relative and counterbalancing, and each is equally capable of being framed into a positive conception. The I. is a conception that is inevitable as of a positive and productive reality, whenever the human mind deals with *being* as primal, or with present being as originating or beginning—and equally as not beginning.—For the opposite view, ingeniously and brilliantly advocated by Mansel, see **CONDITIONED, PHILOSOPHY OF THE**; see also **EXTENSION**.

INFIRM, a. *in-fĕrm'* [F. *infirm*e—from L. *infir'mus*, weak, infirm—from *in*, not; *firmus*, strong, solid: It. *infermo*]: weak in bodily or mental health; feeble; irresolute. **INFIRM'LY**, ad. *-lĭ*. **INFIRM'ITY**, n. *-mĭ-tĭ* [F. *infirmité*]: or **INFIRM'NESS**, n. a failing; a fault; mental instability; a disease, malady, or defect. **INFIRMAR'IAN**, n. *-fĕr-mār'ĭ-an*, a monk or nun having the charge of the infirmary in a religious house; a religious person attending on the sick of his or her order. **INFIRM'ARY**, n. *-ă-rĭ* [F. *infirmierie*—from mid. L. *infirmāriū*]: a hospital for the sick poor; a place for gratuitous medical relief.—**SYN.** of 'infirm': weak; enfeebled; debilitated; sickly; imbecile; unsound; unsolid; unstable;—of 'infirmity': failing; imperfection; weakness; frailty; foible; irresolution; debility; imbecility; feebleness; defect; malady.

INFIX, v. *in-fĭks'* [L. *in*, into; *fixus*, fast, firm]: to fix or set in; to implant. **INFIX'ING**, imp. **INFIXED'**, pp. *f ĭks'et'*.

INFLAME—INFLAMMATION.

INFLAME, v. *in-flām'* [L. *inflammārē*; to set on fire—from *in*, in or on; *flamma*, flame]: *literally*, to set on fire; to kindle; to excite; to increase or augment; to exasperate; to heat the blood, as with wine; to grow hot or angry. **INFLAMING**, imp. **INFLAMED'**, pp. *-flāmd'*. **INFLAMER**, n. *-mēr*, one who inflames. **INFLAMMABLE**, a. *in-flām'mā-bl* [F.—L.]: that may be easily kindled; combustible. **INFLAMMABLY**, ad. *-bli*. **INFLAMMABLENESS**, n. *-bl-nēs*, or **INFLAMMABILITY**, n. *-bil'ī-tī*, the state or quality of being readily set on fire. **INFLAMMATION**, n. *-mā'shūn* [F.—L.]: redness and heat in some part of the body, accompanied with pain and swelling; heat; animosity. **INFLAMMATORY**, a. *-tēr-ī*, tending to inflame or excite; marked by inflammation.—**SYN.** of 'inflame': to burn; irritate; provoke; fire; exaggerate; aggravate; incense; enrage; anger; heat.

INFLAMMATION: most important of all the morbid processes that fall under the notice of the physician or surgeon. The most obvious symptoms or phenomena of I. when it attacks an external or visible part, are pain, redness, heat, and swelling, or, in the words of Celsus, '*rubor et tumor cum calore et dolore.*' The general characters of the process will be best understood by an assumed case. If a healthy man gets a splinter of wood or any other foreign body imbedded in any fleshy part, he begins to experience pain at the part, soon succeeded by redness of the skin, a firm and extremely tender swelling at and around the spot, and a sense of abnormal heat. These purely local symptoms are succeeded, if the I. reach a certain degree of intensity, by a general derangement of the vascular and nervous systems, to which various names, such as constitutional disturbance, symptomatic or inflammatory fever, pyrexia, etc., have been applied. If the foreign body is extracted, the probability is that all these symptoms will gradually abate until the part at length regains its natural appearance and sensations. In this case, the I. is said to terminate by *resolution*, and this is the most favorable mode of termination. If, however, the cause of irritation is not removed, or if the intensity of the morbid process exceed a certain point, the following phenomena occur: the swelling assumes a more projecting or pointed form, the part becomes softer, and the skin at its centre which is usually the most projecting part, becomes whiter. There is a sensation of throbbing pain, and if the skin be not divided by the knife, it finally breaks, and a yellow, cream like fluid, known as pus (q.v.), escapes, after which the symptoms rapidly abate. This termination is known as *suppuration*.

If the original injury was very severe, and the I. intense, there may be actual death of the part affected. In that case, the red color of the skin becomes purple or greenish black, the pain ceases, and the part becomes dead and putrid. This is *mortification*. Under favorable circumstances, this dead part, which is called a *slough*, spontaneously separates from the adjacent living parts by a vital process known as *Ulceration* (q.v.), and the cavity thus formed gradually fills up and heals.

The *pain* may vary from mere discomfort to intense

INFLAMMATION.

agony. There is usually most pain in those parts in which the tension produced by the swelling is the greatest, as in bone, serous and fibrous membranes, etc. The pain occurring in I. is always aggravated by pressure, and by this means the physician can often distinguish between inflammatory and non-inflammatory disorders. The *heat* is seldom so much increased as the sensation of the patient would lead him to believe; it does not rise above the maximum heat of the blood in the interior of the body. This increase of heat depends on the increased flow of arterial (or highly oxidized) blood to the part. The *redness* depends on there being more blood than usual in those vessels in the affected part which usually carry red blood; on the blood containing an increased number of red corpuscles; and on red blood entering into vessels which, in the normal state, convey colorless fluids only, or which naturally admit so few red corpuscles that they cannot usually be observed. The *swelling* depends in part on the distension of the blood-vessels, but mainly on the effusion of various fluids, such as blood, serum, coagulable lymph (or fibrine), and pus into the tissue of the affected part. These fluids are termed the *products* of I. This coagulable lymph frequently becomes organized, and many changes, some of a reparative nature (to which a reference is made below) and others of a morbid nature, depend on its effusion.

Numerous observers have attempted to trace the exact phenomena of I. by microscopic examination of the transparent parts of animals in which the process has been artificially excited. From observation made on the web of the frog's foot and other transparent parts of animals by Wharton Jones, Paget, and others, the following general conclusions may be drawn.

1. The primary effect of a slight stimulus applied to the blood-vessels is a slight and gradual contraction, with a retardation of the current through them.

2. During this contraction, the blood is impeded, or altogether stops. But the vessels soon dilate to a size larger than they originally possessed, and the blood now moves through them more rapidly than in the normal state. The slight stimulus that previously caused the vessels to contract, has now, if re-applied, little or no effect; but on applying a more powerful irritant, such as a minute drop of tincture of capsicum, the phenomena of active congestion or determination of blood become a most instantaneously developed. The vessels become lengthened, dilated, and tortuous, and are distended with blood which contains a great excess of red corpuscles, and is circulated with far more than the normal velocity.

3. But if the injury be still more severe—if, for example, a red-hot needle be inserted—then, in addition to the active congestion described in the preceding paragraph, there is a retardation, and finally a complete stagnation of the blood in the capillaries of the injured spot, while around it the blood moves rapidly through turgid but less full vessels.

The blood obtained by bleeding a patient suffering from

INFLAMMATION.

I. of any important organ, usually presents a peculiar appearance after coagulation. In healthy blood, the clot consists of a uniform admixture of blood corpuscles and coagulated fibrine, and is of deep red color; but in I. the upper part of the clot consists of a layer of a yellowish or whitish color, to which the term *buffy coat* is applied. This buffy coat is often concave, or hollowed out into a cup-like form, in which case the blood is said to be both buffed and cupped. The cause of this buffy coat is still to some extent in doubt; but the phenomenon is clearly due to a subsidence of the blood corpuscles, by which a layer of fibrine, forming the buffy coat, is left at the surface. Another and more important change in the blood in I. is the augmentation of the fibrine, which often rises to two, three, or more times its normal quantity.

Reference has been made above to coagulable lymph or fibrine as one of the products of inflammation. This effusion of coagulable lymph is an important process both for good and for evil. When coagulable lymph is effused between membranes normally in contact (or nearly so) with one another, it often causes them to cohere. In this way we often have adhesions of the adjacent surfaces of serous membranes, such as the pleuræ, the pericardium, and the peritoneum, which materially interfere with the natural free motion of the parts, and occasion various persistent morbid symptoms. In I. of the iris, the pupil may be rendered irregular or immovable, or may even be closed by the effusion of coagulable lymph. In endocarditis, or I. of the lining membrane of the heart, coagulable lymph may be deposited in wart-like masses on the valves, and may thus occasion some of the worst forms of cardiac disease. On the other hand, in many cases, the effusion of coagulable lymph has a reparative and conservative influence. It is by the organization of this fluid that the lips of recent wounds are glued together, and that parts recently severed from the body may be sometimes replaced and still live. The success of the Talicottian operation, by which a new nose is engrafted in the position of that which had been lost—of the operation of injecting a stimulating fluid into cystic tumors, etc., with the view of setting up adhesive I.—and of various other surgical operations, essentially depends on the property of organization possessed by this fluid. It is thus, too, that ulcers are gradually filled up till the breach of texture is repaired.

For inflammatory diseases of the most important organs, see the specific titles. As a general rule, the termination *-itis* is employed to indicate an I.: thus, pleuritis signifies I. of the pleura; peritonitis of the peritoneum; iritis of the iris; etc. I. of the lungs, however, is usually known as pneumonia instead of pneumonitis.

It is unnecessary here to consider the treatment of I. further than to remark (1) that if possible we must remove its exciting cause, which can seldom be done except when the I. is external; and (2) that the patient should be placed on a strictly antiphlogistic regimen (which implies total abstinence from solid animal food and stimulating drinks.

INFLATE—INFLECT.

INFLATE, v. *in-flāt'* [L. *inflātus*, blown into, caused to swell—from *in*, into; *flārē*, to blow: Sp. *inflar*, to inflate]: to fill and swell out with air; to blow in; to puff up; to elate. **INFLA'TING**, imp. **INFLA'TED**, pp.: **ADJ.** blown up; filled with air; pompous; full of high sounding words. **INFLA'TINGLY**, ad. *-lì*. **INFLATION**, n. *in-flā'shùn* [F.—L.]: the act of inflating; the state of being distended, as with air; the state of being puffed up, as with pride or vanity.

INFLECT, v. *in-flēkt'* [L. *inflec'tērē*, to bend or curve—from *in*, into; *flecto*, I bend]: to bend; to turn from a direct line or course; in *gram.*, to show the various changes of termination which a word undergoes. **INFLECT'ING**, imp. **INFLECT'ED**, pp. **INFLEC'TION**, n., or **INFLEX'ION**, n. *-flēk'shùn* [F. *inflexion*]: the act of turning from a direct line or course; in *gram.*, the act of putting a word through all its changes of termination; the rise or fall of the voice in speaking; modulation of the voice: in *optics* (see **DIFFRAC-TION**). **INFLEC'TIONAL**, a. *-āl*, pertaining to the nature of an inflection. **INFLEC'TIVE**, a. *-tīv*, having the power of bending.

INFLECTION.

INFLECTION, in Grammar: general term for all those changes that words undergo when placed in relation to one another in a sentence: see DECLENSION: CONJUGATION: GENITIVE. Most of these changes occur in the end syllable or syllables of the word; and with regard to these at least, there is every reason to believe that they were originally separate words joined on to the root-words (see LANGUAGE), and that through the natural processes of phonetic change and decay, the compounds thus formed gradually assumed the forms now known in grammar as cases, numbers, persons, tenses, etc. In some instances, the original suffix can be readily recognized, and, by the help of Comparative Grammar, much has been done in recent times in tracing the more disguised inflections to their source; so that the greater part may be considered as satisfactorily established. Confining our remarks to the Indo-European languages, we may safely assert, that the syllables used in forming the cases of nouns and the terminations of verbs are of pronominal origin. Thus, *mi*, *si*, *ti*, as the endings of the three persons of the present singular of the verb, are evidently connected with the personal pronouns *ma*, *tva* (*sva*), *ta*; and the plurals *mas*, *tas*, *nti*, contain the same with an indication of the plural number. The nominative singular of masculines and feminines, ending in *s* (*equu-s*, ἵππο-ς, *fini-s*, πῖσσι-ς), contains the personal pronoun of the third person, *ta* (το, nom. *sa*, ὁ); the plural, *piscēs*, κόρακες, is probably only a corruption of the same pronoun put twice (*pisci-sa-sa*—i.e., fish that and that), the doubling of the pronominal element expressing symbolically a plurality of the same thing. In the oblique cases, we meet with other pronominal elements, which indicate that a certain thing is placed with regard to the predicate in the three fundamental directions of motion—those of *whither*, *where*, and *whence*. The accusative is the exponent of the direction of an action *toward* some object, and its termination *m*, in the plural *ns* (i.e., *m* with the plural termination *s*), is connected with the pronomen *ama*, *yon*. I (comp. Lat. *i-s*, *i-d*, *i-bi*) is the pronominal syllable employed for signifying that an action has arrived at a certain goal, and is continuing there, giving the dative and locative cases; while the starting from a certain point is indicated by the pronoun of the third person, *ta*, and its equivalent *sa* (that), corrupted to *t* and *s*, the termination of the ablative and genitive cases. The dative and genitive of the plural express the same relations as the singular, though they are less clear as to their origin. If, notwithstanding the identity of terminations, the aggregate of nouns must, by a manifest analogy, be classified into several distinct declensions, this in most cases is to be accounted for by the difference of the formation of stems or bases previous to their coming in contact with the affixes. It is natural that the so-called crude forms should undergo a different process of contraction according to the nature of their final vowel. The dative *lupô*, from the crude form *lupô*, is as much a contraction of *lupo-i*, as is the dative *finî* from *finî-i*. Consonantic bases, or of the vocalic, those

INFLECTION.

which end in *u* (*v*), a vowel of a decided consonantic quality, are most apt to preserve the inflections in their unaltered form, being less liable to change on the conflict of congruous or incompatible elements. Accordingly, the third Greek, and the third and fourth Latin declensions, present a much more normal aspect of the original inflections than the others. This does not preclude the possibility of a peculiar inflection being preserved in one or other declension; for nothing is more certain than that language, at a certain stage of its development, created and applied a great variety of means to the same purpose, and that these became limited only when the rising intellect of the human tribes, and their distribution into larger or smaller political bodies, taught and compelled them to economize their ways of expression.

In the formation of certain tenses of the verb, we find a process different from the combination of a nominal or verbal base with a pronominal syllable. The Latin subjunctive of the first conjugation, the future in *bo*, the Greek optative and future, the Latin imperfect, and the perfect ending in *avi*, *ui*, *ivi*, consist of the verbal root with an already inflected form of the verbs *i*, to go, *us* and *fu*, to be. However strange this may appear at first, it is nevertheless a fact that, e.g., εἶην, I would be (for ἐσ-ιην. Skr. *s-yám*, Lat. *s-íem*), originally meant, I go (if I mistake not) in being, I am in doubt of the act of being; that ποιη-σεις, thou wilt do. is literally translated, 'thou mayest be doing.' The Latin *i-bat* for *i-fuat*, or *i-vit* for *i-fuit*, is still more clearly, 'he was in the act of going.' That auxiliary verbs sometimes assume the function of inflections, is proved by the French future, where forms like *trouverai*, *finirai*, are easily recognized as compositions of the infinitive with the verb *avoir* (*finir-ai*, I have to finish).

The inflections hitherto described affect the end of words, and possess the character of a composition of a significative word or root with a syllable of local import, or an inflected form of a verb. But language employs other means of a symbolical nature, either in the middle or the beginning of verbs, with the object of representing the various aspects in which an action can appear. We find that the present tenses generally have longer forms than those of the past. The additions commonly used are long vowels or diphthongs, inserted nasals and semi-vowels, or, lastly, reduplication. It seems that the weight given to the verbal root by these appliances is intended to exhibit the continuance of an action in the present tenses, in contrast with the fleeting or momentary operation of the past. In a similar manner, the long vowels peculiar to the subjunctive in Greek, (τύπτετον-τύπτητον, τύπτομεν-τύπτωμεν) convey the idea of doubt or uncertainty, by means of the longer interval required for the pronunciation of the intermediate long vowel, thus expressing the hesitation of the speaker with regard to the reality of his judgment. The reduplication in the perfect, being originally a repetition of the root (*tu-tu-di*), is not so much the sign of a past time, as the sym-



Indri (*Indris laniger*.)



Inexhaustible Bottle.



a, Indusium.



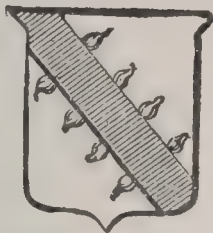
Inescutcheon.



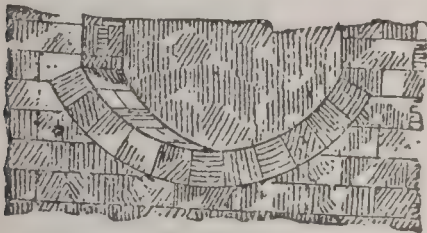
Inescutcheon.



Inferior Ovary.



Bend Inflamed.



Inflected Arch.



Varieties of Inflorescence.

1, Spike; 2, Amentum or Catkin; 3, Raceme; 4, Panicle; 5, Whorl; 6, Umbel—*a*, Simple; *b*, Compound; 7, Cyme; 8, Corymb; 9, Thyrsus; 10, Head or Capitulum; 11, Fasciculus or Fascicle; 12, Spadix; 13, Anthodium.

INFLEXED.

bol for an action having passed from the stage of incipience into that of completion.

The wear and tear of time exercises its influence as well on the radical part of words as on their inflections. Grammatical terminations of a totally different formation by corruption become obscured, and identical in shape with others of heterogeneous purport. The Latin *Romae* takes on itself the functions of *Româ-i-s* (gen.), of *Româ-i* (dat.), *Româ-i* (locat.), and *Româ-i-es* (nom. pl.); or *populo* those of *populô-i* (dat.), *populo-d* (abl.), and at a very early age that of *populo-m*. The absence of written standard works of such a national importance as to penetrate into the masses of a people, and to check their inclination toward misapplying or neglecting inflections which in progress of time have lost their inherent meaning, and therefore appear cumbersome, accelerate the change of the inflective system into the analytical. The demand for a precise, and, so to speak, material expression of those manifold relations, appropriated to inflections in ancient languages, is felt more keenly with the waning distinctness of the latter; and sudden political revolutions, such as the invasion of Italy by Teutonic tribes, or the conquest of England by the Normans, interrupting the influence of the privileged classes of a nation, bring the struggle to an issue, and give the ascendancy to the popular movement. Articles, prepositions, pronouns, auxiliary verbs, take in modern language the place of inflections; and notwithstanding that these are not entirely destroyed, they have a precarious existence, and are in danger of being finally supplanted by the tendency to represent every distinct relation of words to each other by a distinct expression. The application of the *s* as a mark of the possessive case becomes more and more limited in modern English, and the mistaken effort to supersede this relic of Saxon inflection by the substitution of the pronoun *his*, has been defeated because it proceeded from learned pedants, and not from the people. The termination *nt* as a sign of the plural in French verbs (*aiment*, *aimaient*), may be called almost a dead letter, only traditionally preserved in spelling. The loss of inflections has deprived modern languages of the wonderful simplicity and power of the ancient tongues, and the periphrastic mode of expression adopted in these languages prevents them from arranging all the parts of a sentence with the same degree of liberty. On the other hand, they have gained in perspicuity. After all, they have only reversed the process of the combination of pronominal and auxiliary words with others; but by placing them in front, the attention of the hearer or reader is called at once to the particular modification of every possible shade of a given thought.

INFLEXED, a. *in-flĕkst'* [L. *inflexus*, bent, curved—from *in*, into; *flecto*, I bend]: turned; bent; in *bot.*, curved or bent upwards and inwards. INFLEXIBLE, a. *in-flĕks'ĭ-bl* [F. *inflexible*—from L. *inflexib'ilis*, that cannot be bent—from *in*, not; *flexib'ilis*, pliant, flexible]: that cannot be bent; not to be moved or prevailed on by entreaty or argument; unyielding; inexorable. INFLEX'IBLY, ad. *-blĭ*. IN-

INFLEXION—INFLUENCE.

FLEX'IBIL'ITY, n. -bíl'ĩ-tĩ [F. *in'flexibilit  *], or **INFLEX'IBLE-NESS**, n. -bl-n  s, unyielding stiffness; obstinacy of will or temper.—**SYN.** of 'inflexible': unbending; stubborn; unrelenting; rigid; pertinacious; obstinate; firm; unalterable.

INFLEXION, n. another spelling of **INFLECTION**: see under **INFLECT**.

INFLICT, v. ĩn-flĩkt' [L. *in'flictus*, let fly against, hurled at—from *in*, on; *flĩgo*, I strike down]: to lay on; to impose, as a punishment or disgrace. **INFLICT'ING**, imp. **INFLICT'ED**, pp. **INFLICT'ER**, n. one who. **INFLICTION**, n. ĩn-flĩk'sh  n [F.—L.]: the act of laying on or applying; that which is applied; punishment or hardship imposed; a calamity. **INFLIC'TIVE**, a. -tĩv [F. *in'flictif*]: able or tending to inflict; imposing a punishment.

INFLORESCENCE, n. ĩn'fl  -r  s's  ns [F. *inflorescence*—from L. *in'fl  res'cens*, beginning to blossom—from *in*, in or on; *fl  res'c  r  *, to blossom or flourish]: a flowering or putting forth blossoms: in *botany*, designating the flowers of a plant considered as characteristic, i.e., collectively and with reference to the manner in which they are arranged and the succession in which they are developed. The flower-bud being a modified leaf-bud, and the parts of the flower modified leaves, it might be expected that the inflorescence should exhibit a close correspondence with the ramification of the plant, but the modification in the parts immediately concerned in the production of flowers is so great, that this is far from being the case. A most important classification of kinds of inflorescence is into **CENTRIFUGAL** and **CENTRIPETAL** (q.v.). When the flowering axis produces only a single terminal flower, the inflorescence must be regarded as of the centrifugal kind. The terms used to designate more specifically the different kinds of inflorescence are numerous. For principal of them, see separate titles, e.g. **CATKIN**: **CONE**: **CORYMB**: **CYME**: **PANICLE**: **RACEME**: **SPIKE**: **UMBEL**: **ETC.** But it is to be regretted that such terms are still used somewhat vaguely or carelessly, even by eminent botanists, or in such various senses, that the inflorescence of the same plant is often described by one term in one botanical work, and by another term in another. Hence arise confusion and difficulty, not entirely to be ascribed to the endless variety exhibited in nature.

INFLUENCE, n. ĩn'flu-  ns [OF. *influence*, a flowing in as of a supposed modifying power of the planets—from mid. L. *in'fl  en'ti  *, a flowing into; It. *influenza*, influence, power—from L. *in'fl  ens*, flowing into—from *in*, into; *fl  o*, I flow]: power supposed to be exercised by the planets—primarily a term of astrology; authority; sway; power of directing or modifying, seen or felt by its effects; ascendancy: V. to move or affect by moral force; to lead or direct; to move or affect by a physical power not palpably apparent, such as the atmosphere, electricity, etc. **IN'FLUENCING**, imp. **IN'FLUENCED**, pp. -  nst. **IN'FLUEN'TIAL**, a. -  n'sh  l, exerting a directing or modifying power over the minds of men. **IN'FLUEN'TIALLY**, ad. -sh  l-l  .

INFLUENZA.

INFLUENZA, n. *in'flû-ën'ză* [It. *influenza*, influence, an epidemic catarrh (see INFLUENCE)]: severe epidemic catarrh or cold, attended with loss of strength, and with fever; one of the class of diseases to which the term *Zy motic* (q.v.) is now applied. It has been long recognized by medical writers, though its English name is modern. Cullen called it *catarrhus e contagio*, but though, in most cases, it closely resembles ordinary catarrh, it presents certain points of difference. In addition to the ordinary symptoms of catarrh, there is a sudden, early, and very striking debility and depression of spirits. This early debility is one of the most marked and characteristic signs of influenza. The mucous membranes (especially the pulmonary membrane) are much affected. The tongue is white and creamy, the sense of taste is lost, there is no appetite, the pulse is soft and weak, the skin, though at first hot and dry, soon becomes moist, and the patient complains of pains and soreness in various parts of the body.

In simple, uncomplicated cases, convalescence supervenes in the course of a week or sooner, but I. is frequently conjoined with bronchitis or pneumonia, in which case it is much more persistent and dangerous.

Influenza affords an excellent example of an epidemic disease, a whole community being often attacked within a few hours. From this it may be inferred that the occurrence of this disease is connected with some particular condition of the atmosphere; but what that condition is, is not known. Frequently, I. follows close on a sudden thaw; sometimes it is preceded by thick, ill-smelling fogs. One hypothesis refers the disease to some change in the electrical state of the air; and one of the latest and most probable conjectures regarding its exciting cause, is that of Schönbein, who refers it to the presence of an excess of ozone (q.v.) in the atmosphere. Like cholera, I. generally follows a westerly direction, or one from the s.e. toward the n.w., and its course seems to be altogether independent of currents of air, as it frequently travels against the prevailing wind.

The most important point in the treatment of I. is *not* to bleed the patient or in any way to depress his vital powers. He should be kept in bed; the bowels should be gently opened; the skin slightly acted upon, if dry; and, if the cough be troublesome, a mustard-poultice should be applied to the chest, and an expectorant mixture prescribed. In persons of weak or broken-down constitutions, ammonia, beef-tea, and wine and water must be given from the outset. The debility that often remains for a considerable period after the establishment of convalescence, is best met by the preparations of iron and quinine.

Few diseases increase the death-rate to such an extent as influenza, more, however, in consequence of the great number of persons who are attacked in a severe epidemic, than in consequence of its danger in individual cases,

INFLUX—INFORMER.

INFLUX, n. *in'flüks* [L. *influxus*, flowing or running in—to—from *in*, into; *flūō*, I flow]: the act of flowing in; infusion; importation.

INFOLD, v. *in-föld'* [*in*, into, and *fold*]: to wrap up; to inclose; to clasp, as with the arms. **INFOLD'ING**, imp. **INFOLD'ED**, pp. **INFOLD'MENT**, n. *-mènt*, act of infolding; state of being infolded.—**SYN.** of 'infold': to enwrap; embrace; clasp; wrap; involve.

INFORM, v. *in-förm'* [F. *informer*, to inform—from L. *informāre*, to shape, to fashion—from *in*, in or on; *formo*, I form or shape: It. *informare*—*lit.*, to give form or shape to a thing]: to instruct; to communicate knowledge to; to make known to; to tell; to give intelligence. **INFORM'ING**, imp. **INFORM'ED**, pp. *förm'd'*. **INFORMANT**, n. *in-förm'-änt*, one who communicates intelligence or news. **INFORM'ER**, n. *-ér*, one who makes it his business to lay facts of a criminal or illegal character before the authorities. **INFORMATION**, n. *in'förm-mā'shün* [F.—L.]: intelligence; knowledge derived from reading or instruction; an accusation laid against a person in a court of law (see **INFORMATION**, in Law). **TO INFORM AGAINST**, to accuse of a breach of law. **INFORMED**, a. [*in*, not, and *formed*]: in *OE.*, not formed; imperfectly formed.—**SYN.** of 'inform': to acquaint; apprise; advise; teach; in *OE.*, to animate; appear.

INFORMAL, a. *in-för'mäl* [*in*, not, and *formal*: Sp. *informal*]: contrary to established forms; not with the official forms; irregular; not competent. **INFOR'MALLY**, ad. *-lī*. **IN'FORMAL'ITY**, n. *-mäl'ī-tī*, want of established or official forms; irregularity in form or procedure.

IN FORMA PAUPERIS, *in för'mă paw'pēr-īs* [L.]: in the form of a pauper; applied to a person who gets leave to carry on an action at law without paying the fees of court and other costs.

INFORMA'TION, in Law: an accusation laid against a person in court—a substitute for an ordinary indictment. There are also informations called *quo warranto*, to test the validity of an election or appointment to a public office, etc. The term is commonly used to denote the written statement often but not invariably made on oath before a justice of the peace, previous to the issuing of a summons or complaint against a person charged either with a crime or with an offense punishable summarily. By process of I. associations and corporations may be brought into court to answer for infraction of law, or for violation of charter. In the United States courts, I. may be brought against minor offenses, but capital or infamous crimes must be prosecuted by indictment (q.v.). In some state courts, misdemeanors may be dealt with on I., but felonies only on indictment; in other states, e.g. Penn., either method is allowable.

INFOR'MER, in Law: person who sues for a penalty under some statute. In some statutes which define offenses—not criminal but savoring of criminality—encouragement

INFORMIDABLE—INFUNDIBULAR.

is given to strangers to come forward and prosecute the offense, by giving them power to sue for the penalty for their own benefit in whole or in part. In England, when the informer sues in such an action, it is called a penal or *qui tam* action; but, in general, the penalty is now recoverable before justices of the peace in a summary way. In suits in chancery, which require to proceed in the name of the attorney general, the informer is called a relator: see QUEEN'S EVIDENCE: STATE'S EVIDENCE.

INFORMIDABLE, a. *in-för'mĩ-dũ-bl* [*in*, not, and *formidable*]. in *OE.*, not to be feared; not to be dreaded.

INFRA, *in'frä* [L]: the first element in certain scientific terms, signifying 'beneath; below,'—as *infracostal*, beneath the ribs. INFRA DIG., *in'frä dig* [L. *infra*, beneath, below; and an abbreviation of *dignitatem*, dignity, rank]: beneath dignity; derogatory to one's dignity; unworthy of notice.

INFRACTION, n. *in-frä'k'shũn* [F. *infrac-tion*—from L. *infrac-tionem*, a breaking, a weakening—from *in*, into; *fractus*, broken—*lit.*, a breaking or weakening]: the act of breaking; breach; violation; non-observance.

INFRALAPSARIANS, n. plu. *in'frä-lăp-să'rĩ-ănz* [L. *infra*, below; *lapsus*, a fall]: those Calvinists, known also as *Sublapsarians* (q.v.), who hold that the decrees of God were formed after His knowledge of the fall, and in consequence of it; opposed to SUPRALAPSARIANS, which see.

INFRANGIBLE, a. *in-frän'jĩ-bl* [F. *infrangible*: *in*, not and Eng. *frangible*]: that cannot be broken or separated into parts. INFRAN'GIBIL'ITY, n. *bĩl'ĩ-tĩ*, or INFRAN'GIBLENESS, n. *-bl-nēs*, the state or quality of being infrangible.

INFREQUENT, a. *in frē'kwěnt* [L. *in'frēquens* or *infrēquen'tem*; that does not often happen—from *in*, not; *frēquens*, often, frequent: *in*, not, and Eng. *frequent*: It. *infréquente*]: rare; seldom happening. INFRE'QUENCY, n. *-kwěnt sĩ*, or INFREQUENCY, n. *-kwěns*, the state of occurring rarely; uncommonness. INFRE'QUENTLY, ad. *-lĩ*.

INFRINGE, v. *in-frĩnj'* [L. *infringēre*, to break to pieces—from *in*, into; *frango*, I break]: to break, as laws; to violate; to transgress; to encroach. INFRING'ING, imp. INFRINGED, pp. *-frĩnjd'*. INFRING'ER, n. *-ēr*, one who. INFRINGE'MENT, n. *-mēnt*, breach; violation, as of an agreement or right; non-fulfilment; the infraction of the copyright or patent-rights of another; encroachment.—SYN. of 'infringe': to trespass; break; destroy; hinder; non-fulfil.

INFRUCTUOUS, a. *in-frũk'tũ-ũs* [F. *infructueux*, unfruitful—from L. *infructũosũs*—from *in*, not; *fructus*, fruit]; not producing fruit; unfruitful. INFRUCTESCENCE, n. *in'-frũk-tēs'sěns*, in *bot.*, the character or condition of fruits which are multiple or polythalmic.

INFULÆ, n. plu. *in'fũ-lē* [L. *in'fũlă*, a band]: in *ecclesiastical costume*, the pendants to the mitre.

INFUNDIBULAR, a. *in'fũn-dĩb'ũ-lēr* [L. *infundĩb'ũlum*, a tunnel or funnel]: in *bot.*, having the form of a tunnel;

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funnel-shaped. INFUN'DIBU'LIFORM, a. -dī-bū'li-fōrm [L. *forma*, shape]: funnel-shaped, as a flower. INFUNDIBULUM, n. in'fūn-dīb'ū-lūm. INFUNDIB'ULA, n. plu. -dīb'ū-lū, in *anat.*, a name given to various parts of the body which more or less resemble a funnel; in *zool.*, a tube formed by the coalescence or apposition of the epipodia in the Cephalopoda; known also as the 'siphon' or 'funnel.'

INFURIATE, a. in-fū'rī-āt [L. *in*, into; *fūrīātus*, driven mad; *fūrīā*, a fury, a fiend: It. *infuriato*, grown into a fury or rage]: enraged; mad: V. to enrage; to render furious; to madden. INFU'RIATING, imp. INFU'RIATED, pp.: ADJ. rendered furious or mad.

INFUSE, v. in-fūz' [F. *infuser*, to infuse; *infus*, infused—from L. *infusus*, pored into, infused—from *in*, into; *fundo*, I pour: It. *infuso*, infused]: to pour in, as a liquid; to instil, as principles; to steep in water without boiling. INFUS'ING, imp. INFUSED, pp. -fūzd'. INFU'SIBLE, a. -zī-bl [F.—L.]: that may be infused. INFUSION, n. in-fū'zhūn [F.—L.]: the operation of steeping in water to extract the medicinal qualities of plants; a preparation or liquor obtained by pouring boiling water on a substance, as on tea (see INFUSIONS, below): *figuratively*, inspiration; suggestion; instilling. INFU'SIVE, a. -fū'siv, having the power of being infused.—SYN. of 'infuse': to pour in; inspire; steep; macerate; saturate; tincture; supply; fill; introduce; implant; inculcate.

INFUSIBLE, a. in-fū'zī-bl [F. *infusible*: *in*, not and Eng. *fusible* (see FUSE)]: that cannot be melted. INFU'SIBILITY, n. -bīl'ī-tī, incapability of being melted.

INFUSIONS, or INFU'SA, in Pharmacy: aqueous solutions of vegetable substances obtained without boiling. They are prepared usually by digesting in soft water (which may be either hot or cold) the sliced or powdered substance in an earthenware vessel fitted with a cover. Cold water is preferable when the active principle is very volatile, or when it is expedient to avoid the solution of some ingredient in the vegetable which is soluble in hot, but not in cold water. E.g., in preparing the infusion of calumba, cold water is preferable, because it takes up the bitter principle (which is the essential ingredient), and leaves the starch-matter undissolved. In most cases, however, boiling water is employed. Infusions are preferred to decoctions when the active principle volatilizes at a boiling heat, as in the case of essential oils; or when ebullition readily induces some chemical change, as in the case of senna (q.v.).

Infusions may be prepared also by percolation (q.v.), which is extensively employed in preparations of tinctures. When thus prepared, they are less liable to decay than when prepared on the old system.

INFUSORIA.

INFUSORIA, n. plu. *in'fū-sō-rī-ă* [mid. L. *infusōriă*; F. *infusoires*—from L. *infusus*, poured into, soaked]: very minute animal organisms or animalcules inhabiting water containing decaying vegetable or animal matter—so called from their being readily obtained in *infusions* of vegetable matter that have been exposed to the air; the name is now restricted to a class of the protozoa. INFUSO'RIAL, a. *-rī-ăl*, obtainable by infusion; pertaining to infusoria. INFUSORY, a. *in-fu'zēr-i*, applied to an order of animalcules obtained in infusions; containing infusoria.—*Infusoria* from a class of the sub-kingdom of animals called PROTOZOA (q.v.). The term, originally almost synonymous with Animalcules (q.v.), is now much restricted in its signification. It was used first by Otto Friedrich Müller, and was adopted by Cuvier, who made the infusoria the last class of *Radiata* (q.v.). But their radiated structure is not established. No distinct trace of nervous matter has been found.—After Müller (1773–86), the next to give special study to the infusoria was Ehrenberg, the publication of whose work (1837) made an era in the history of this branch of zoology, which has since been prosecuted with great industry by Dujardin, Stein, Lachmann, and Claparède, Cohn, Lieberkuhn, Rymer Jones, and others. Many of the organisms included by Ehrenberg, as by previous naturalists, among infusoria are now generally regarded as vegetable (see DESMIDIÆ and DIATOMACEÆ); while others, as the *Cercaria* (q.v.), have been discovered to be immature states of Entozoa. The *Rotifera* (q.v.) are now also, by general consent, widely separated from the *Polygastrica* of Ehrenberg, for which alone the term infusoria, though not unobjectionable (see ANIMALCULE), is retained; the term *Polygastrica* [Gr. many-stomached] being rejected as erroneous. Agassiz affirmed that the infusoria were all immature or larval worms. But of the forms known, it is probable that many are those of immature creatures; certainly some species assume very different forms at different stages. Saville Kent, in his great *Manual of the Infusoria* (3 vols. 1882, uses the term only of mouth-bearing Protozoa and a few others, and divides the whole into (1) *Flagellata*, (2) *Ciliata*, (3) *Tentaculifera*. See the classification of the Protozoa, under ZOOLOGY.

Some of the infusoria are large enough to be individually visible to the naked eye, but most of them are altogether microscopic. Their bodies are composed of *sarcode*, a glutinous diaphanous substance, of which the outer layer sometimes forms a more or less resisting integument. The body has some well-defined form, of which the varieties are very great in different species. Many are furnished with *cilia*, the motion of which carries them with great rapidity through the fluid in which they live, by means of which also currents are created in the fluid to bring food to the mouth. The mouth is very generally surrounded or largely provided with cilia. Whether these organs are under the control of will, or obtain their motion without will or even consciousness on the part of the creature, like the cilia of the epithelium in higher animals, is not determined. There is an analogy in favor of the latter opinion, and

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many appearances—which, however, the phenomena of zoospores, etc., teach us to regard as possibly deceptive—in favor of the latter. Some infusoria, instead of cilia, have a few slender filaments, which they agitate with an undulatory movement; others move by contractions and extensions of their bodies. Some have stiff bristle-like organs, which they use as feet for crawling on the surfaces of other bodies; and some have hooks, by which they attach themselves to foreign bodies.

All these animals have a distinct mouth, and many have also an anal opening, sometimes near the mouth, sometimes at the opposite extremity of the body. Between these Ehrenberg imagined that he could trace an intestine, straight in some, variously bent in others, with which along its course many small stomachs are connected; while in the infusoria, having only one aperture, he supposed all the stomachs to open immediately from it. But other observers have failed to find the canal and stomachs, though Ehrenberg's experiments, by means of fluids colored with indigo and carmine, have been often repeated. And it seems probable that the food taken into the mouth is simply conveyed into the midst of the soft gelatinous substance of the body, being formed into pellets as it passes from the mouth through a kind of gullet in the firmer integument. The food consists of organic particles of various kinds, and different species have been remarked to show a preference, like those of higher animals, for particular kinds of food. Many of them feed on microscopic plants and other infusoria. Their great use in the economy of nature is probably to consume organic particles, the decomposition of which would otherwise be baneful to all life, and the return of which by decomposition to their primitive elements would diminish the fertility and wealth of the world. The numbers of the infusoria are prodigious. They are found in all parts of the world, in fresh and salt water, in stagnant ponds and ditches, in mineral and hot springs, and in moist situations. Any infusion or other liquid containing vegetable or animal matter, if left exposed to the atmosphere, is sure to be full of them. Their multitudes are so great that leagues of the ocean are sometimes tinged by them. Some, which, instead of swimming freely, like most of their class, become surrounded with a gelatinous substance, are found adhering together in masses sometimes four or five inches in diameter, though the individual animals are so small that a cubic inch of the mass may contain 8,000,000 of them. The number contained in a single cup of putrid water may exceed the whole human population of the globe.

Their organization is still very imperfectly known. There appears in many of them a cavity not far from the mouth, the *contractile space*—variously regarded as a cavity without proper walls, or as a vesicle—from which branches sometimes radiate through the substance of the body, and which, being capable of contraction and expansion, is regarded by some as the centre of a kind of vascular system. It is with considerable probability regarded as furnished

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with proper walls. There is also, probably in all, another organ, evidently of great importance, though its use is uncertain, called the *nucleus*, usually roundish or a little elongated, sometimes much elongated and band-like. It is enveloped in a membrane, and is more compact than the surrounding substance. In the multiplication of these animals by spontaneous division, a fission of the nucleus always takes place. Each of the halves becomes furnished with a complete mouth, set of cilia, and other organs. The division, in the same species, is sometimes longitudinal, sometimes transverse, perhaps alternately longitudinal and transverse. The multiplication of the infusoria in this way is extremely rapid. A *Paramecium*, well supplied with food, has been observed to undergo division every 24 hours, from which would result 16,384 individuals in a fortnight, or 268,435,456 in four weeks. Reproduction takes place also by gemmation; buds or gemmules forming on the outer surface of the body, and gradually assuming the shape of the parent animal, though they do not attain their full size till after separation. More extraordinary is another mode of reproduction by *encysting* or *encapsulation*. The animal contracts, closes its mouth, becomes surrounded by a viscid secretion and finally by a membrane, becomes attenuated, and dissolves, all but the nucleus, into a mere liquid containing granules, which afterward form within the cyst a new infusorium, different in form and appearance from that by which the cyst was produced. The metamorphoses of the class have been traced to a certain extent in some kinds, but not fully in any. Whether any truly sexual propagation takes place, has not been perfectly ascertained, though the observations of Balbiani have made it extremely probable as to some of them. A reproduction, different from all above mentioned, has been observed in some, by the formation of internal germs, to which this character has been ascribed, but the subject is still involved in doubt, nor is it improbable there may be among these minute creatures a production of real eggs which has hitherto eluded observation.

In the integument of some infusoria, very minute fusiform bodies are thickly imbedded, called *trichocysts*, capable of throwing out long filaments. Their use is unknown, though they are supposed to be urticating organs. The filaments are thrown out when the animal is subjected to annoyance by the drying up of the liquid in which it lives, or by the application of some irritating liquid.

INFUSORIA, FOSSIL: see DIATOMACEÆ.

ING, n. *ing* or *inj* [AS. *ing*; Icel. *eng*, a meadow]: in *OE.* a meadow, generally one near a river; a common pasture.

INGALLS, *ing'galz*, JOHN JAMES, LL.D.: statesman: b. Middleton, Mass., 1833, Dec 29. He graduated at Williams College 1855, was admitted to the bar 1857, removed to Atchison, Kan., to practice 1858, was member of the Wyandotte constitutional convention 1859, sec. of the Kan. terr. council, 1860, sec. of state senate 1861, state senator and unsuccessful candidate for lieut.gov. 1862, editor of

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the *Atchison Champion* 1863-66, again defeated for lieut. gov. 1864, elected U. S. senator as a republican 1872, 78, and 84, and elected pres. pro tem. of the U. S. senate 1887, Feb.

INGALLS, RUFUS: soldier: b. Denmark, Me., 1820, Aug. 23. He graduated at the U. S. Milit. Acad. 1843; served in the rifles and dragoons and in the Mexican war; entered the quartermaster's dept. U.S.A. as capt. 1848, Jan. 12; accompanied Col. Steptoe's expedition across the continent; was on staff duty with Gen. Harney at Fort Vancouver 1856-60; appointed aide to Gen. McClellan with rank of lieut.col. 1861, Sep. 28; was chief quartermaster of the Army of the Potomac 1862-65; promoted brig.gen. of vols. 1868, and col. and asst. quartermaster-gen. U.S.A. 1866; brevetted brig.gen. and maj.gen. U.S.A. 1864-65, mustered out of the vol. service 1866, Sep. 1; chief quartermaster at New York 1867-76, 1881-2; promoted quartermaster-gen. U.S.A. 1882, Mar. 14; and placed on the retired list 1883, July 1. He d. 1893, Jan. 15.

INGATE, n. *in'gāt*: in *found.*, the aperture in a mold at which the metal enters; it then passes by runners to the spaces made vacant by the withdrawal of the pattern. The ingate is technically called the tedge, gate, geat, or git. The last two are corruptions of gate.

INGATHERING, n. *in-găth'ēr-ing* [*in*, into, and *gather ing*]: harvest; the act of securing the fruits of the earth.

INGELOW, *in'je-lō*, JEAN: author: b. Boston, England; 1830; daughter of William I., a wealthy banker subsequently of Kensington, England. She was educated at home, and published her first vol. of poems 1863. This effort at once met favor in England and the United States, and encouraged her to become one of the most charming writers of English literature. Her poetical works are: *Poems*, including *High Tide on the Coast of Lincolnshire*, 1571, etc. (1863). *A Story of Doom, and Other Poems* (1867), *Monitions of the Unseen*, and *Poems of Love and Childhood* (1870), and *Poems of the Old Days and the New* (1885); prose: *Tales of Orris* (1860), *Off the Skelligs* (1872), *Fated to be Free* (1874), *Don John*, and *Sarah de Berenger* (1881), and *John Jerome* (1886); and juvenile: *Studies for Stories* (1864), *Poor Matt* (1866), *Stories Told to a Child*, 2 series (1866-72), *A Sister's Bye-Hours* (1868), *Mopsa the Fairy* (1869), and *Little Wonder-Horn* (1872). A beautiful *Jean Ingelow Birthday Book* was issued 1882. She d. 1897, July 19.

INGEMANN, *ing'eh-mân*, BERNHARD SEVERIN: 1789, May 28—1862, Feb. 24; b. in the island of Falster: poet and novelist of Denmark. His literary career may be divided into three periods. The first, 1811-14, embraces his best lyrical productions, viz., the collection of poems entitled *Procne* (1812), and the allegorical epic *De Sorte Riddere* (1814); the second, or dramatic period, ending 1822, was marked by the appearance of numerous tragedies, greatly popular at first, now little regarded. In the third period, I.'s writings are characterized either by historical disquisition, or by a strongly religious bias. His epic poem *Valde-*

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mar den Store og Hans Mænd (1824) was the prelude to the various historical novels, in which, taking Sir Walter Scott for his model, he endeavored to portray the social life and habits of his own country in the middle ages. *Valdemar Seier*, the first of the series (1826), and *Erik Menved's Barn-dom* (1828), are generally regarded as the best of these productions. His poems are based, like his novels, on incidents of Danish national history and tradition. Among his religious works are a collection of anthems and psalms, *Højmessepsalmer* (1825); and a rendering of some symbolical or traditionary legends of the church in his *Blade af Jerusalem's Skomager's Lommebog* (1833); *Sulemon's Ring* (1839). His best works are his novels. For many years he was very popular; but later a more cultivated criticism has reduced his rank among Danish writers. He had an amazing fecundity; and an endless flow of sentimentality, often tinged with a religious melancholy, which gave his writings instant acceptance in the common mind. I. held the chair of æsthetics and Danish literature at the Royal Acad. of Sorø, near Copenhagen. His collective works have been published in 38 vols., 1857 Copenhagen, and the greater number of his prose works and many of his poems have been translated into various languages.

INGEMINATE, v. *in-jēm'ī-nāt* [L. *ingemīnātūs*, redoubled—from *in*, into; *geminō*, I double or increase]: to double or repeat. INGEMINATING, imp. INGEMINATED, pp. INGENINATION, n. repetition; reduplication.

INGENDER: see ENGENDER.

INGENIOUS, a. *in-jēn'yūs* [L. *ingēniōsus*, endowed with genius; *ingēniūm*, innate or natural quality, capacity: It. *ingenio*, genius: F. *ingénieux*, ingenious]: inventive; skilful or prompt to contrive; clever or curious, as applied to any work or mechanism; witty, acute, or pointed; in *OE.*, mental; intellectual. INGENIOUSLY, ad. -lī. INGENIOUSNESS, n., or INGENUITY, n. *in-jē-nū'ī-tī* [F. *ingénuité*]: cleverness or superior power of invention; quickness or acuteness in forming new and unexpected combinations; superior skill.—SYN. of 'ingenious': clever; aptly formed;—of 'ingenuity': skill; inventiveness; cleverness; in *OE.*, wit; invention; acuteness; subtlety; genius.

INGENUE, n. *anj nō* [F.]: an ingenuous, artless, naïve girl or young woman; one who displays candor or simplicity in circumstances where it is not expected; used often of female parts in plays; also an actress who plays such parts.

INGENUOUS, a. *in-jēn'ū-ūs* [L. *ingēniūus*, frank, natural—from *in*, in, and *gēnērē*, old form of *gignērē*, to beget; It. *ingenuo*; F. *ingēnu*, candid, open]: open; frank; candid; free from reserve or dissimulation. INGENUOUSLY, ad. -lī. INGENUOUSNESS, n. -nēs, openness of heart; freedom from reserve or dissimulation; frankness.—SYN. of 'ingenuous': fair; open; candid; generous; noble, free-born; unreserved, plain; artless; sincere; hearty; cordial; warm.

IN'GERMANN LAND, or IN'GRIA: see ST. PETERSBURG, GOVERNMENT OF.

INGERSOLL.

INGERSOLL, *ing'ghér-sol*: incorporated town in Oxford co., Ont., Canada; on the Thames river and the Great Western railway; 19 m. e. of London, 85 m. w.s.w. of Toronto. It contains numerous costly public buildings, several grist and saw mills, manufactories of agricultural implements, machinery, castings, woolen goods, cheese, and wooden ware, 7 churches, branch bank, and newspapers; and has a large export trade in lumber and farm produce. Pop. (1881) 4,318; (1891) 4,191; (1901) 4,573.

INGERSOLL, CHARLES J.: statesman: 1782, Oct. 3—1862, May; b. Philadelphia; son of Jared I., who was active in the American revolution, and a member of the convention which adopted the federal constitution. Charles received a liberal education, completed by European travel. In 1801, he produced the tragedy of *Edwy and Elgiva*, and in 1808, a strong political pamphlet in defense of the democratic policy of Mr. Jefferson, and a satirical review of American politics, entitled *Inchiquin's Letters* (1810). He was elected to congress 1812; and 1814, he advocated the principle that 'free ships make free goods,' in a powerful speech. He was for 14 years U. S. district attorney for Penn., and was in congress 1839-49. He published two series of *Historical Sketches of the War of 1812*, 1845, and 52. A speech in opposition to the Lincoln administration caused his arrest 1862; but it was found advisable to release him, after a brief detention.

INGERSOLL, JARED, LL.D.: 1749-1822, Oct. 31; b. Conn.: lawyer. He graduated at Yale College 1766, studied law in London, settled in Philadelphia to practice was a delegate to the continental congress 1780-1, member of convention which framed the federal constitution 1787, attor.gen. of Penn. two terms, U. S. dist.attor. for the e. dist. of Penn., declined appointment as chief judge of the federal court, and was pres. judge of the dist. court of Philadelphia co. at the time of his death.

INGERSOLL, ROBERT GREEN: lawyer: b. Dresden, N. Y., 1833, Aug. 11. He was son of a Congl minister, received a common-school education, removed to Ill. 1843, and began practicing law in Shawneetown 1854. In 1857 he removed to Peoria, 1860 was defeated as a democratic candidate for congress, 1862 was appointed col. of the 11th Ill. cav., was captured by the Confederates near Corinth, Tenn., and shortly after his release resigned his commission and resumed his practice. In 1866 he was appointed attor.gen. of Ill., 1868 was a prominent candidate for the gubernatorial nomination, 1876 nominated James G. Blaine for presidential candidate in the national republican convention in a speech that attracted wide interest by its eloquence, and 1877 declined the proffered office of U. S. minister to Germany. His law practice has become very large, but he will never accept a retainer in what he knows to be unjust causes, or where he believes fraud is intended by the applicant. He secured the acquittal of the 'star-route conspirators' 1883, but refused to act as counsel for the Chicago anarchists 1886, and to

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take part in the prosecution of Stephen J. Field, assoc.-justice U. S. supreme court, and David Nagle, U. S. dep.-marshal, for the killing of ex-Judge David S. Terry 1889. He was an eloquent and forcible speaker and writer, a pronounced atheist, attacking Christianity in offensive terms, whose violence hinders their effect. Socially he was esteemed for benevolence. His publications include *The Gods, and Other Lectures* (Washington 1878); *The Ghosts* (1879); *Some Mistakes of Moses* (1879); *What Shall I do to be Saved? Interviews on Talmage and the Presbyterian Catechism; The 'North American Review' Controversy; Lectures Complete* (1883); *Prose Poems and Selections* (1884); and introductory chapters to Denslow's *Modern Thinkers* (1881) and Beall's *The Brain and the Bible* (1882). D. 1899.

INGEST, v. *in-jest'* [L. *ingestus*, poured or thrown into—from *in*, into; *gērō*, I bear]: to throw into the stomach. INGEST'ING, imp. INGEST'ED, pp. INGESTION, n. *in-jest'-yūn*, the act of throwing into the stomach. INGESTA, n. plu. *in-jēs'tā*, things taken in, as food taken into the stomach; opposed to *ejesta*.

INGHAM, *ing'am*, CHARLES CROMWELL: 1796–1863, Dec. 10; b. Dublin: painter. He belonged to an artistic family, studied painting in Dublin Acad., took a prize there with his *Death of Cleopatra* 1817, removed to New York the same year, became eminent as a portrait-painter, and was a founder of the National Acad. of Design and the Sketch Club, and vice-pres. of the Acad. 1845–50. Beside portraits of local beauties and national celebrities, his works include *The Laughing Girl; The Flower Girl; The White Plume; and Day Dreams*.

INGHAMITES, n. *ing'hām-īts*: small, religious sect founded by Benjamin Ingham, one of the early Methodists. Separating from his original connection, he joined the United Brethren, but soon afterward founded a sect, the doctrines of which were a modification of those of the Sandemanians.

INGLE, n. *ing'gl* [Gael. *aingeal*, fire, light: comp. L. *ignīc'ūlus*, a little fire—from *ignis*, a fire]: in *Scot.*, a fire or fireplace. INGLE-CHEEK, the fireside.

INGLORIOUS, a. *in-glō'rī-ūs* [L. *inglōriūs*, without glory or fame—from *in*, not; *glōriā*, glory, renown: F. *inglorieux*]: not bringing honor, glory, or fame; mean; disgraceful. INGLO'RIOUSLY, ad. -lī. INGLO'RIOUSNESS, n.

INGLUVIES, n. *in-glō'vī-ēz* [L. *inglūviēs*, the crop or maw of animals]: the crop or partial dilatation of the œsophagus in birds; the stomach of ruminants. INGLU'VIAL, a. -vī-āl, connected with the crop.

INGOLSTADT, *ing'ōl-stāt*, or INGOLDESTADT, *ing'ōl-dē-stāt* (anc. *Aureatum*, and by the Latin writers of the 16th c. called *Auripolis* and *Chrysopolis*, the golden city): town and fortress of Upper Bavaria, in a fertile district, on the left bank of the Danube, here crossed by a stone bridge, 46 m. n.n.w. of Munich. It contains three parish churches (two Rom. Cath., one Prot.), a hospital, and a castle.

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Cloth, playing-cards, and leather are manufactured; and breweries and a trade in corn are carried on. Pop. (1880) 15,251; (1885) 16,390; (1890) 17,646.

I. is an ancient, melancholy-looking town, too large for the number of its inhabitants. A university was founded here 1472, which reckoned Reuchlin, Aventin, and other eminent scholars among its professors. It was removed to Landshut 1800, and to Munich about six years later. I. was the first German town at which the Jesuits were permitted to establish themselves, and to teach publicly from the university chairs. Loyola gave it the fond title of 'his little Benjamin.' After the suppression of the order 1773, Adam Weisshaupt established here the order of the Illuminati (q.v.). In 1827, the fortifications of I., destroyed by the French 1800, were restored on a large scale, the two forts on the left bank of the river being especially distinguished for elegance and strength.

INGORGE: see ENGORGE.

INGOT, n. *in'gõt* [F. *lingot*, an ingot or wedge: Ger. *einguss*, a melting-vessel, an ingot-mold—from Ger. *eingiessen*; Dut. *ingieten*, to pour in]: originally the mold in which the metal was cast; a small mass or bar of unwrought metal—generally said of silver or gold. *Note*.—The F. *lingot* is really derived from the Eng. *ingot*, with the incorporation of the article—thus, F. *lingot* = *l'ingot*. It is not at all clear whether the first sense of *ingot* as given was the primary signification. We have AS. *in*, in, and *goten*, poured—from *geótan*, to pour, to fuse metals: comp. *yellin*, cast metal, a boiler; *yelling*, an iron pot, a gridiron, which are provincial terms in Scotland: comp. also Sp. *lingote*, an ingot; mid. L. *lingötus*, a small mass of silver or gold of the size and length of a tongue, and treated as if from L. *lingua*, a tongue, the meaning, according to this latter, being simply 'a tongue of precious metal.'

INGRAFT, v. *in-gräft'* [*in*, into, and *graft*]: to insert a prepared part of one tree into another for propagation; to plant or introduce something foreign; to set or fix deeply. INGRAFT'ING, imp. INGRAFT'ED, pp. INGRAFT'MENT, n. the act of ingrafting; the thing ingrafted.—SYN. of 'ingraft': to implant; insert; propagate; introduce; set; fix.

INGRAFT'ING: see GRAFTING: INARCHING.

INGRAHAM, *ing'gra-am*, JOSEPH HOLT: 1809–1860, Dec.; b. Portland, Me.: Prot. Episc. clergyman. He went to sea as a common sailor at an early age; engaged in mercantile business and took a collegiate course on his return; became prof. of languages in Jefferson College, Miss.; published *The Southwest, by a Yankee; Lafitte, or the Pirate of the Gulf; Burton, or the Sieges; Captain Kyd, The Dancing Feather*, and other popular romances (1836–54); took orders in the Prot. Episc. Church 1855; became rector of a parish and of St. Thomas's Hall for Boys at Holly Springs, Miss.; and published *The Prince of the House of David* (1855), *The Pillar of Fire* (1859), and *The Throne of David* (1860).

INGRAILED—INGRES.

INGRAILED': see **ENGRAILED**.

INGRAIN, v. *in-grān'* [*in*, into, and *grain*: F. *en graine*, in grain—from Sp. or It. *grana*, seed, cochineal]: to impregnate or fix deeply; to dye in the raw material, or before being manufactured. **INGRAIN'ING**, imp. **INGRAINED'**, pp. *grānd'*: **ADJ.** thoroughly impregnated; dyed in the raw material, or before manufacture. **ROGUE-INGRAIN**, a thorough rogue; one dyed as it were in the grain.

INGRATE, a. *in'grāt* [F. *ingrat*, ungrateful—from L. *ingrātus*, unthankful, ungrateful]: ungrateful; unthankful; N. one who is ungrateful for favors received; an ungrateful person. **INGRATE'FUL**, a. *-fúl*, in *OE.*, wanting gratitude; unthankful.

INGRATIATE, v. *in-grā'shĭ-āt* [L. *in*, into; *grātĭā*, favor: It. *ingraziare*, to gain the good-will or favor of]: to secure the good-will or favor of another; to commend one's self to the favor or confidence of another. **INGRA'TIATING**, imp. **INGRA'TIATED**, pp.

INGRATITUDE, n. *in-grāt'ĭ-tūd* [*in*, not, and *gratĭtude*: F. *ingratitude*; It. *ingratitude*, ingratitude—from L. *ingrātus*, unthankful]: the return of evil for good; unthankfulness.

INGREDIENT, n. *in-grē'dĭ-ĕnt* [F. *ingrédient*—from I. *ingrēdiĕntem*, going or entering into—from *in*, into; *grādĭōr*, I go]: that which enters into a compound or mixture; a component part.

INGRES, *ānggr*, **JEAN DOMENIQUE AUGUSTE**: 1781, Sep. 15—1867, Jan. 14; b. Montauban: eminent painter of the French school. A casual view of a copy of one of Raphael's pictures inspired him (so it is said), at the age of ten, with the ambition to become a painter: he forthwith began to study drawing; and after having been successively the pupil of a M. Roques and of M. Briant, landscape-painter, he went to Paris in his 17th year, and entered the studio of the great painter David. He remained with David as a pupil for four years. He carried off the second prize for painting at the Academy of the Fine Arts 1800; and in the following year, he took the first—an honor scarcely awarded to any other so young an artist. The picture which gained this high distinction was *The Arrival of the Intercessors at the Tent of Achilles*—now at the School of Fine Arts. In 1802, he exhibited two portraits, which still rank among his finest works of this class; 1804, he exhibited a portrait of the First Consul, also a portrait of himself. He again painted Napoleon, then become emperor, 1806, and the picture was bought for the Hôpital des Invalides. In 1806, he went to Rome, where he lived for many years. He seems to have soon made a reputation in Italy. From his countrymen, however, the pictures which he sent to Paris, for many years met only neglect or ridicule. At Florence, where he resided 1820–24, he painted a picture which at length gained him a party of enthusiastic admirers among the Parisians. The picture was *Le Vœu de Louis XIII.* It was exhibited at

INGRES.

the Louvre 1824, and though much decried as well as much admired, it still raised I., previously almost unnoticed, at a bound to the chief place among French idealist painters of that time. He received from Louis XVIII. the cross of the Legion of Honor; and he was forthwith appointed to succeed Baron Denon as prof. at the Academy of the Fine Arts.

Now that he had become the acknowledged head and representative of a school of art, it was natural that his work should be subjected to a searching criticism, more eager to detect faults than to discover merits. He brought on himself a tempest of discussion 1827 by *L'Apothéose d'Homère*, which his admirers declared a masterpiece; while the party of his detractors—then numerous and influential—condemned it as bad in drawing, poor in coloring, and especially as being ungraceful, coarse, and even vulgar in conception. The French critics seem now agreed not only that this was I.'s finest attempt at epic painting, but that it places him at the head of the French school, and on the level of the greatest painters the world has seen. Many foreign judges, however, are disposed to hold that the strictures originally made upon it were to a large extent well founded. The discussion which it originated ranged over all the painter's work; it was renewed year after year, and the bitter expressions of some of his critics made such an impression upon I., that 1832-34 he exhibited nothing but two portraits, and in the latter year again established himself in Italy. He became director of the French Acad. at Rome, a post which has been held by many distinguished artists, and in which his predecessor was Horace Vernet. This time he remained in Italy about ten years. During these years, he sent many pictures to be exhibited at Paris; these gradually wrought upon the public taste; and when he returned, he found his countrymen unanimous and enthusiastic in admiration of him, and in raptures about his latest composition—*Cherubini [the composer] Inspired by the Muse*. Since then, it has been treason to art in Paris to breathe a doubt about the greatness of Ingres. The state ratified the decision of the public by the liberality with which it bestowed its honors upon him. He was made an officer of the Legion of Honor 1841, a commander 1845, and grand officer 1855; he was named a senator 1862, May 25; and soon afterward was appointed a member of the imperial council of public instruction. He became a member of the Institute 1825. Many of his works are now in public collections. At the Paris Exhibition 1855, a room was set apart for his pictures, and one of two grand medals of honor was awarded to him—Eugene Delacroix getting the other. He continued to exercise his art almost to the close of his life; and whatever may be thought of the success of his higher aims, he showed himself to the last what he had always been, one of the most painstaking, conscientious, and learned of painters. The Naiad, 1861 (*La Source*), his solitary contribution to the London Exhibition 1862, is considered the finest of his later works; it was enthusiastically admired, even by those

INGRESS—INGULPHUS.

who strongly dissented from the praises lavished by his countrymen on his more ambitious undertakings.

L'Apothéose d'Homère, Le Martyre de St. Symphoene, La Naissance de Venus Anadyomène, La Source, L'Odalisque, and the portrait of M. Bertin, aîné, are among the most characteristic—they are certainly among the most admired—of the works of Ingres. His admirers—at present the whole body of his countrymen—recognize in him, among modern painters, the most faithful and persevering, and the most successful student of the traditions of the Renaissance; they declare his paintings equal in power and fidelity to the best works of the great masters. On the other hand, it is maintained by his censors or detractors that I. was deficient in invention and in refinement; that all the good things in his works have been borrowed from ancient pictures; and that, moreover, he copied badly from his models, and often spoiled what he borrowed by his setting of it. Such censures appear greatly exaggerated; but it may be confidently said that I. is at present worshipped by his countrymen with a blind veneration; and that they would do well to expend on his few really great works the admiration which they lavish on everything that proceeded from him.

INGRESS, n. *in'grēs* [L. *ingressus*, an entering or a going into—from *in*, into; *grādīōr*, I go]: entrance; power, right, or means of entrance. **INGRESSION**, n. *in-grēsh'ūn*, the act of entering.

IN'GRIA: see **ST. PETERSBURG, GOVERNMENT OF**.

INGROS'SING (copying): see **ENGROSSING**.

INGUINAL, a. *ing'gwān-āl* [L. *inguinālis*—from *inguen*, the groin]: pertaining to the groin.

INGULF, v. *in-gūlf* [*in*, into, and *gulf*]: to swallow up wholly, as in a gulf or depth; to cast into a gulf. **INGULF'ING**, imp **INGULFED'**, pp. *-gūlft'*. **INGULF'MENT**, n. the swallowing up in a gulf or abyss.

INGULPH'US, or **INGULF**, *in'gūlf*: abbot of Croyland: long considered the author of the *Historia Monasterii Croylandensis* (History of the Monastery of Croyland or Crowland, in Lincolnshire): supposed to have been born in London about 1030; d. Croyland, 1109, Dec. 16. According to the account of his life in his History, he studied oratory and philosophy at Oxford; became a favorite of Edgitha, wife of Edward the Confessor; visited Duke William of Normandy at his own court in 1051; and, after a disastrous pilgrimage to the Holy Land, entered a Norman monastery. Here he remained till 1076, when he was invited to England by the Conqueror, and made Abbot of Croyland. The *Historia Monasterii Croylandensis* was printed by Savile, London, 1596; more complete ed. by Gale, Oxford 1684. It has been translated into English for Bohn's Antiquarian Library. Some writers even of the last century questioned the entire genuineness of the book; but Sir Francis Palgrave, in the *Quarterly Review*, 1826, is generally considered to have proved that the whole

INGURGITATE—INHALATION.

so-called History was little better than a novel, probably the composition of a monk in the 13th or 14th century.

INGURGITATE, v. *in-gér'jĭ-tăt* [L. *ingurgitātus*, swallowed up or gulfed in—from *in*, in; *gurgēs*, a whirlpool: It. *ingurgitare*]: to swallow greedily or in great quantity. INGUR'GITATING, imp. INGUR'GITATED, pp. INGUR'GITA TION, n. *-tā'shŭn*, the act of swallowing in great quantity.

INHABIT, v. *in-hăb'it* [L. *inhăbitārē*, to dwell in, to inhabit—from *in*, into; *habitō*, I dwell: F. *inhabiter*, to inhabit]: to occupy, as a place of settled residence; to live or abide. INHAB'ITING, imp. INHAB'ITED, pp.: ADJ. occupied, as by persons or animals. INHAB'ITABLE, a. *-tă-bl*, that may be dwelt in; but in *OE.*, not habitable; uninhabitable. INHAB'ITANT, n. *-ĭ-tănt*, one who dwells or resides in a place. INHAB'ITER, n. *-tēr*, an inhabitant. INHAB'ITA TION, n. *-tā'shŭn*, in *OE.*, a place of dwelling; an abode; state of being inhabited. INHAB'ITANCE, n. *-ans*, the quality or state of being an inhabitant. INHAB'ITATIVENESS, n. *-tĭv-nēs*, in *phren.*, the organ which is said to prompt men to inhabit particular spots in preference to others, thus imbuing them with love of home.

INHALA TION, in Medicine: method of introducing into the system various anæsthetic and curative agents; employed first for administering chloroform and ether to relieve the pain of surgical operations; and afterward for giving nitrous oxide, or 'laughing' gas for the painless extraction of teeth, and other agents for relief in catarrh, hay-fever, asthma, bronchitis, and some forms of pulmonary diseases. Chloroform and ether are generally administered by means of a metal or paper horn with the open end large enough to cover the mouth and nose. A piece of sponge saturated with the agent is placed in the horn, which is then held over the mouth and nose by one physician or an assistant, while the operating or consulting physician, with finger on the patient's pulse, determines the proper quantity to be inhaled. A folded towel similarly moistened and laid over the mouth and nose is likewise employed by some physicians. The 'laughing' gas requires mechanical handling, and consequently is seldom used except by dentists in their own offices. The simpler exhalants that may be used at home without a physician's aid, may be prepared in general by placing the material from which the gas or vapor is to be obtained in a bowl, jug, or other convenient receptacle, and either pouring boiling water on it or placing the vessel on a stove or over a spirit-lamp. As soon as the gas or vapor arises, the head, with mouth open, should be held over the vessel that the vapor may be inhaled by both mouth and nose. Covering the head and the vessel with a shawl facilitates the speedy action of the agent used. For catarrh, asthma, hay-fever, and some lung troubles, various remedial agents are prepared by druggists and inhaled from small glass bottles by means of a tube placed in the mouth or nostrils.

INHALE—INHESION.

INHALE, v. *ĭn-hāl'* [L. *inhālārē*, to breathe at or upon—from *in*, in or on; *hālō*, I breathe]: to draw into the lungs, as air; to inspire. **INHA'LING**, imp. **INHALED'**, pp. *-hāld'*. **INHA'LER**, n. *-lēr*, one who or that which. **INHA'LABEL**, a. *-lā-bl*, that may be drawn into the lungs. **IN'HALA'TION**, n. *-shān*, the drawing into the lungs of air, fumes, or vapor; that which is inhaled. **INHALENT**, a. *ĭn-hā'lēnt*, used for inhaling. **INHA'LANT**, n. *-lānt*, an instrument from which any vapor may be inhaled.

INHAMBAN, *ēn-yām-bān'*, or **INHAMBANA**, *ēn-yām-bā'nā*, or, **INHAMBANE**, *ēn-yām-bā'nā*: fortified Portuguese town of Sofala, on the s.e. coast of Africa, at the tropic of Capricorn; on a deep bay 200 m. n.e. of Delagoa Bay, and near the mouth of the I. river. It has a large export trade in oil, nuts, rubber, ivory, wax, and copal. Pop. (1870) 6,500; (1887) 10,000.

INHARMONIC, a. *ĭn'hār-mōn'ik*, or **IN'HARMON'ICAL**, a. *-ĭ-kāl* [*in*, not, and *harmonic*]: discordant; not musical. **IN'HARMO'NIOUS**, a. *-mō'nĭ-ūs* [*in*, not, and *harmonius*]: discordant; unmusical. **IN'HARMO'NIOUSLY**, ad. *-lĭ*. **INHAR'MONY**, n. *-nĭ*, discord.

INHAUL, n. *ĭn'hawl*, or **INHAULER**, n. *-ēr*: in *naut.*, a rope or purchase for rigging-in the jib-boom, studding-sail-boom, or other spar.

INHEARSE, v. *ĭn-hērs'* [*in*, in, and *hearse*]: to inclose in a hearse; to inclose a funeral monument.

INHERE, v. *ĭn-hēr'* [L. *inhærērē*, to remain firm or fast in—from *in*, into; *hærēō*, I stick]: to exist or be fixed in something else; to belong, as attributes or qualities. **INHE'RING**, imp. **INHERED'**, pp. *-hērd'*. **INHESION**, n. *ĭn-hē'zhūn* [L. *inhesus*, remained firm in]: the state of being fixed in something else. **INHERENT**, a. *ĭn-hē'rēnt* [F. *inhérent*—from L. *inhæren'tem*]: naturally pertaining to; innate; natural. **INHE'RENTLY**, ad. *-lĭ*. **INHE'RENCE**, n. *-rēns* [F. —L.], or **INHE'RENCY**, n. *-rēn-sĭ*, existence in something else, so as to be inseparable from it.—**SYN.** of 'inherent': **inborn**; **native**; **inbred**; **inwrought**.

INHERIT, v. *ĭn-hēr'it* [Norm. F. *enheriter*, to inherit—from L. *in*, in or on, *hærēs*, an heir: F. *hériter*, to inherit—from mid. L. *hereditārē*]: to possess by descent from an ancestor; to receive by nature from a progenitor, as a disease or quality; to enjoy. **INHER'ITING**, imp. **INHER'ITED**, pp.: **ADJ.** received by right or descent; possessed. **INHER'ITOR**, n. *-ĭ-tēr*, one who inherits. **INHER'ITRIX**, n. fem. *-ĭ-triks* or **INHER'ITRESS**, n. fem. *-trēs*, a female who inherits or is entitled to inherit. **INHER'ITABLE**, a. *-tū-bl*, that may be transmitted from the parent to the child. **INHER'ITABLY**, ad. *-tū-blĭ*, by inheritance. **INHER'ITABIL'ITY**, n. *-bĭl'ĭ-tĭ*, the quality of being inheritable. **INHER'ITANCE**, n. *-ĭ-tāns*, possessions which may descend to an heir; reception of possession; hereditary estate: see **HEIRS**: **INTESTACY**: **WILL**: **SUCCESSION**.

INHESION: see under **INHERE**.

INHIBIT—INIA.

INHIBIT, v. *in-hīb'it* [L. *inhībītus*, kept back, restrained—from *in*, not; *hābēō*, I have or hold]: to restrain; to hinder; to check or repress; to forbid. **INHIBITING**, imp. **INHIBITED**, pp. **INHIB'ITER**, n. *-ēr*, one who. **INHIBITION**, n. *in'hī-bish'ūn* [F.—L.]: restraint; a writ from a higher to a lower court to stay proceedings; in *Scot.*, a process in law which restrains a wife from burdening her husband with debts: also, writ issued to prohibit a person from alienating his heritable estate until the debt of the creditor is paid.—For Inhibition in *physiol.*, see **NERVOUS SYSTEM**. **INHIB'ITORY**, a. *-tēr-ī*, having the nature or power of an inhibition.

INHOOP, v. *in-hóp'* [*in*, into, and *hoop*]: in *OE.*, to confine within an inclosure.

INHOSPITABLE, a. *in-hōs'pī-tā-bl* [OF. *inhospitable*—from L. *in*, not; *hospēs*, or *hospitem*, a guest: *in*, not, and Eng. *hospitable*]: not disposed to entertain friends or strangers; affording no means for subsistence or shelter, as a rugged desert country. **INHOS'PITAL'ITY**, n. *-tāl'ī-tī* [F. *inhospitalité*]: want of kindness to others; unwillingness or refusal to entertain. **INHOS'PITABLY**, ad. *-blī*.

INHUMAN, a. *in-hū'mān*, or **IN'HUMANE'**, n. *-mān'* [*in*, not, and *human*: L. *inhūmānūs*, savage—from *in*, not; *hūmānus*, human: F. *inhumain*, inhuman]: cruel; destitute of the kindlier qualities of human nature; pitiless. **INHU'MANLY**, ad. *-lī*. **IN HUMAN'ITY**, n. *-mān'ī-tī* [F. *inhumanité*]: cruelty in disposition; cruelty in act; barbarity.—**SYN.** of 'inhuman': barbarous; savage; unfeeling; brutal; merciless.

INHUME, v. *in-hūm'* [F. *inhumer*—from L. *inhūmārē*, to bury in the ground—from *in*, in; *hūmō*, I bury—from *hūmūs*, the earth]: to bury; to inter; to deposit in the earth, as a dead body. **INHU'MING**, imp. **INHUMED'**, pp. *-hūmd'*. **INHUMATION**, n. *in'hū-mā'shūn* [F.—L.]: the act of burying; interment; a method of digesting a substance by burying the vessel containing it among dung or warm earth.

INIA, *in'ī-a* (*Inia Boliviensis*): cetaceous animal, of family *Delphinidæ*, in form resembling a dolphin, with a long and



Inia (Boliviensis).

slender snout. It is the only known species of its genus, and is one of the few cetacea which inhabit fresh water.

INIMAGINABLE—INJECT.

It is found in some of the upper tributaries of the Amazon, and in the lakes near the Cordilleras. It is from 7 to 12 or 14 ft. long. The I. feeds chiefly on fish. It is pursued for the sake of its oil. It is found usually in little troupes of three or four. The females show great affection for their young.

INIMAGINABLE, n. *in'īm-āj'in-ă-bl* [*in*, not, and *im-aginable*]: that cannot be imagined; for the commoner spelling 'unimaginable.'

INIMICAL, a. *in-īm'ī-kāl* [mid. L. *inimicālis*—from L. *inimicus*, unfriendly—from *in*, not; *amicus*, a friend]: hostile; unfriendly; adverse. **INIMICALLY**, ad. *-lī*.

INIMITABLE, a. *in-īm'ī-tă-bl* [F. *inimitable*—from L. *inimitabilis*, that cannot be imitated—from *in*, not; *imitor*, I imitate]: that cannot be imitated or copied. **INIMITABLY**, ad. *-blī*. **INIMITABILITY**, n. *-bīl'ī-tī*, incapability of being imitated or copied.

INIQUITOUS, a. *in-īk'wī-tūs* [F. *iniquité*—from L. *iniquitatem*, unevenness, injustice—from *in*, not; *æquus*, even, equal: It. *iniquita*, iniquity]: characterized by injustice; very unjust; wicked. **INIQUITOUSLY**, ad. *-tūs-lī*. **INIQUITY**, n. *-wī-tī*, injustice; wickedness; marked departure from justice.—**SYN.** of 'iniquitous': nefarious; unjust; criminal; unrighteous;—of 'iniquity': crime; vice; sin; offense; trespass; transgression; wrong; misdeed; unrighteousness.

INITIAL, a. *in-īsh'ăl* [F. *initial*—from mid. L. *iniġiālis*—from L. *iniġiūm*, beginning, an entrance—from *in*, into; *ġitus*, gone: It. *iniziale*]: beginning; placed or being at the beginning: N. that which begins; the first letter of a word or proper name. **INITIALS**, n. plu. *in-īsh'ălz*, the first or capital letters of a name and surname; in many cases, equally binding with the full name, especially in mercantile documents; though the regular signature in all legal deeds and writings is by full name and surname. **INITIATE**, v. *-īsh'ī-ăt* [F. *initier*—from L. *iniġiārē*, to initiate; *iniġiātūs*, initiated]: to instruct in rudiments or principles; to give an entrance into any society or sect; to perform the first act or rite. **INITIATING**, imp. **INITIATED**, pp. a. instructed in the first principles; entered. **INITIATIVE**, a. *-ă-tīv* [F.—L.]: serving to introduce: N. the introductory step; power of commencing. **INITIATION**, n. *-ă-shūn* [F.—L.]: the act or process of introducing; formal admission. **INITIATORY**, a. *-tēr-ī*, serving to introduce; introductory. **INITIATE**, a. in *OE.*, newly admitted; fresh and unpracticed like a novice.

INJECT, v. *in-jġkt'* [F. *injecter*, to inject—from L. *in-jġctārē*, to throw or cast in or into—from *in*, into; *jġcērē*, to throw]: to throw or cast in; in *anat.*, to fill the vessels of a dead animal with coloring matter to facilitate dissection. **INJECTING**, imp. **INJECTED**, pp. a. thrown in. **INJECTION**, n. *in-jġk'shūn* [F.—L.]: in *med.*, the act of throwing a liquid in by a syringe; the liquid substance thus thrown into a body: such fluids injected into the rectum or lower

INJECTOR.

bowel, are termed clysters (q.v.).—See **ENDERMIC: HYPO-
DERMIC INJECTION: TRANSFUSION OF BLOOD.** **INJEC-
TION-PIPE**, the pipe through which cold water passes to the
condenser of an engine: see **INJECTOR, GIFFARD'S.**

INJECTOR, GIFFARD'S: invention now much used for
feeding water into steam-boilers, particularly locomotive
boilers. Feed-pumps are difficult to keep in order when
driven at high speed. The very rapid action of the valves
severely tries their durability. In locomotives, inconven-
ience was often occasioned by the fact, that their feed-
pumps acted only when they were running; and thus, if
an engine happened to stand still for considerable time,
the water occasionally became too low in the boiler. The
I. acts equally well whether the engine is running or at
rest.

The diagram fig. 1 gives an idea of the essential parts.
A is the steam-boiler, B being the water-level, CDF a pipe

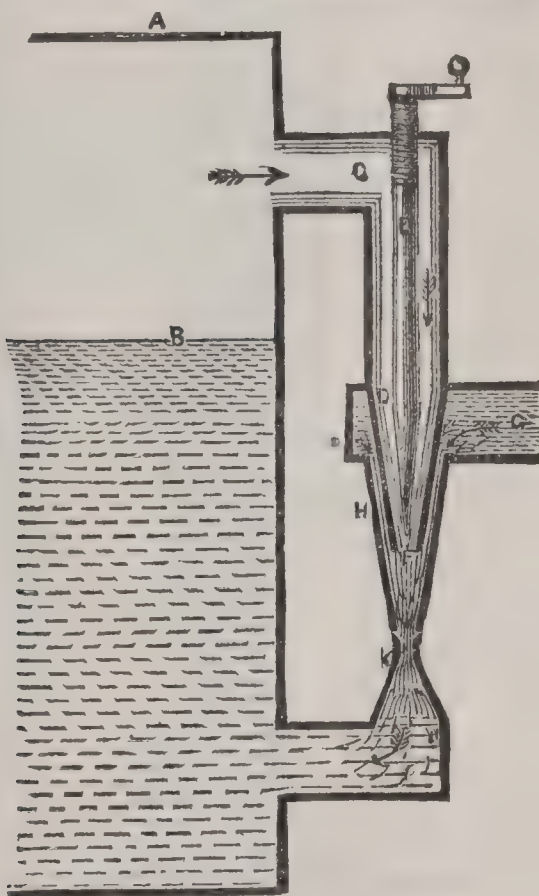


Fig. 1.

into which steam is admitted: this pipe terminates in a
cone DF, inclosed in a larger cone H. In the cone DF,
the pointed plug E can be raised or lowered to increase or
diminish the area of the aperture at its lower end F. G is
a pipe communicating with the water-cistern, and admit-
ting water into the external cone H. K is a pipe com-
municating with the boiler under the water-level. On
opening communications between the boiler and this ap-
paratus, it might be expected that steam would rush out
at F, and water at K, both currents meeting with great
force, and escaping into the atmosphere between the two

INJECTOR.

openings. Paradoxical as it may appear, the outflowing stream of water at K, though it is actually flowing under a greater pressure than the current of steam escaping at F, due to the *head* of water arising from the difference of level between the aperture at K and the water-level at B, is overpowered, and driven back into the boiler; and not only is the outflowing current of steam at F able to drive back the stream of water trying to escape at K, but the torrent of steam drag^s with it a large quantity of water

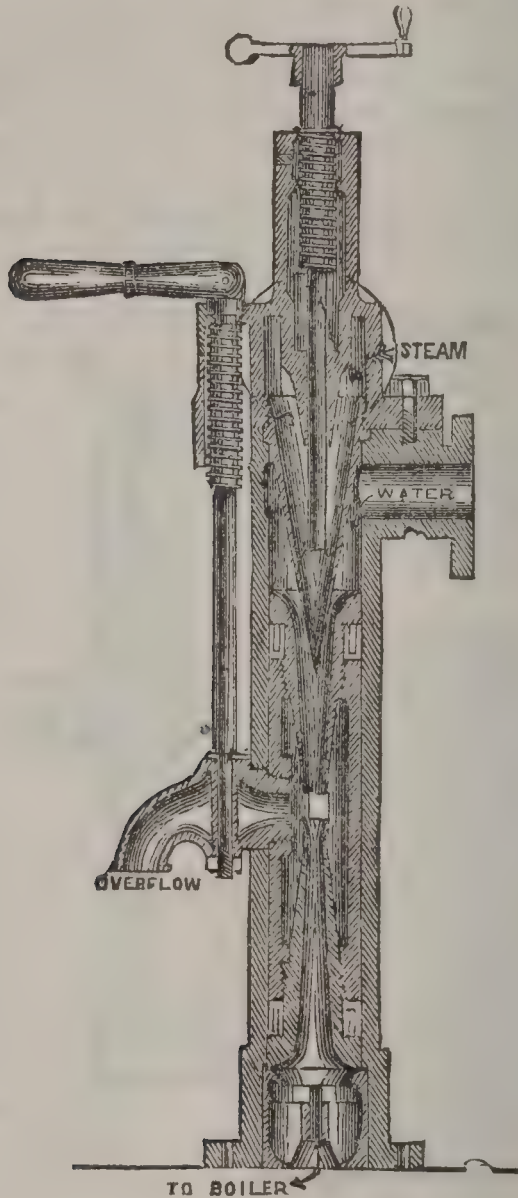


Fig. 2.

with which it comes into contact as it is passing through the cone HH. This water finds its way into the cone HH, through the pipe G, from the tender or cistern, and constitutes the feed-water. The steam rushing from the aperture at F will necessarily be condensed by the cold water with which it comes into contact in the cone HH. The explanation offered of the action of this apparatus is as follows: The opening at F, through which the steam escapes, has nearly twice the area of the opening into which the water is to be forced at K. The opening in the cone HH is also

INJUDICIAL—INJUNCTION.

larger than the aperture at K, and it appears that the mechanical power contained in the flow of steam from F is, as it were, transformed from a large area to a smaller, with a corresponding increase in its intensity. This diminution of its volume arises from its condensation by the cold water through which it has to rush in the cone HH. We get thus the mechanical power due to a column of large area concentrated into a small area, with a corresponding increase in its velocity, and to this increase of velocity is due the fact, that a current issuing at FH will enter at K, in spite of the counter-pressure at K. The injector for feeding boilers is an expensive apparatus, in consequence of the number of adjustable parts required. Variations in the pressure of steam require alterations in the area of the steam-passage, and in the distances between the mouths of the conical openings for the outflow and inflow of steam and water.

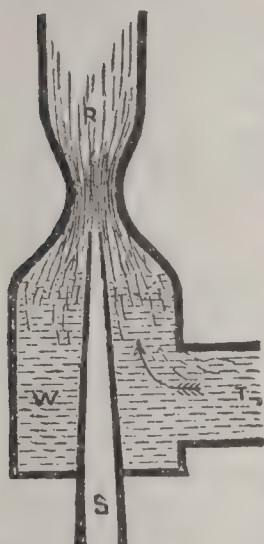


Fig. 3.

Fig. 2 shows in section an I. such as is now in common use.

Fig. 3 shows in section a simple form of I. for raising water. Steam issuing from the pipe S, into the vessel WR, will draw the water through the pipe T, and force it up through the narrow neck below R, to a height of about one ft. for every pound of pressure per sq. inch. It is doubtful if those injectors can work so economically, as regards expenditure of steam, as ordinary slow-moving pumps; but they possess many conveniences and advantages, which are bringing them into use.

INJUDICIAL, a. *in'jû-dîsh'ûl* [*in*, not, and *judicial*]: not according to the forms of law.

INJUDICIOUS, a. *in'jû-dîsh'ûs* [*in*, not, and *judicious*]: acting without judgment; unwise; indiscreet. **IN'JUDICI-
CIOUSLY**, ad. *-lî*, with ill judgment; not wisely. **IN'JUDI-
CIOUSNESS**, n. want of discretion or sound judgment.—**SYN.** of 'injudicious': imprudent; hasty; inconsiderate; incautious; rash.

INJUNCTION, n. *in-jûngk'shûn* [F. *injonction*—from mid. L. *injunctiōnem*—from L. *injunctus*, laid or imposed upon—from *in*, into; *jungo*, I join]: the act of enjoining, commanding, or ordering; a command, order, or precept; urgent advice. **INJUNCTION**, in *law*, prohibitory or mandatory writ issued by a court of equity, commanding a person or persons not to do a contemplated thing, or to desist from continuing an action in progress; or commanding him or them to do a certain thing or continue an action already begun. Where a party feels aggrieved by the action (proposed or in progress) of another, he may obtain a preliminary or temporary I., commanding a cessation of all action pending a judicial determination of the equity in the case; and if the decision be favorable he may also obtain a permanent I., forbidding the execution of the thing

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contemplated or begun by the party so enjoined. The restraint by I. may be applied to state and municipal govts., and railroad and other corporations, as well as individuals. A person may obtain an I. to prevent a steamboat landing at his property, or a railroad corporation extending its road-bed across his property prior to legal condemnation or satisfactory compensation; and a state or city may be restrained similarly from creating or maintaining a nuisance, beginning or completing a thing that will infringe on the rights of an individual or other persons, or permitting the continuance of illegal acts by any official. In cases of individuals, an I. may be used to prevent personal loss or other damage either threatened or in progress, and in a great variety of cases where one individual believes himself liable to injury by the action of another. The violation of an I. is punishable by the issuing authority as a contempt of court on application of the party obtaining the writ.

INJURE, v. *in'jūr* [F. *injurer*, an injury; *injurier*, to insult—from L. *injūrīa*, a thing done contrary to justice—from *in*, not; *jus*, that which is right, law, *jūris*, of law]: to do a wrong to; to hurt or wound; to damage or impair; to lessen the value of. INJURIA, n. *in-jūr'ī-a* [L.]: in law, a legal wrong, that is, an act or omission of which the law takes cognizance as a wrong. IN'JURING, imp. IN'JURED, pp. *-jūrd*. IN'JURER, n. *-jūr-ēr*, one who. INJURIOUS, a. *in-jō'rī-ūs* [F. *injurieux*]: unjust; hurtful to the person, to property, or to rights, feelings, etc.; pernicious; baneful. INJU'RIOUSLY, ad. *-lī*. INJU'RIOUSNESS, n. *-nēs*. INJURY, n. *in'jū-rī*, wrong or damage done to a person, property, rights, interests, etc., of any one; that which brings harm or occasions loss; mischief.—SYN. of 'injury': to impair; hurt; harm; damage; wound; tarnish; slander; diminish; grieve; annoy;—of 'injurious': wrongful; hurtful; unjust; prejudicial; harmful; detrimental; deleterious; noxious.

INJUSTICE, n. *in-jūs'tīs* [F. *injustice*—from L. *injustitia*, unjust proceeding—from *in*, not; *justus*, just]: iniquity; wrong; any violation of the rights or due of another, as, 'you do me an injustice'; unfairness in word or deed.

INK.

INK, n. *ingk* [OF. *enque*, ink--from Gr. *engkauston*; L. *encaustum*, the purple ink used in the signature of the emperor: It. *inchiostro*; F. *encre*; Dut. *inkt*, ink]: a fluid used in writing, printing, etc.: V. to daub or black with ink. INK'ING, imp. INKED, pp. *ingkt*. INKY, a. *ingk'ī*, of or like ink. INK'INESS, n. the quality of being inky. INKSTAND, n. a vessel for holding ink. INK-BAG, the bag containing a deep black liquid found in the cuttle-fish. INKHORN, n. [*ink*, and AS. *ærn*, a secret place]: a portable case for the instruments of writing; an inkholder. INKING-ROLLER, a roller made of a certain composition used by printers for spreading the ink equally over the type, etc. INKING-TABLE, the table or slab covered with ink on which the inking-roller is turned to receive the requisite quantity of ink.

INK: fluid used in writing, printing, etc. The most important kinds are described below, under the heads *Writing-Ink* and *Printing-Ink*. For *China Ink*, see INDIA INK. *Copying-Ink* is ink which yields a fair copy of matter written with it, upon pressing damped tissue-paper against the paper on which the writing in copying-ink was originally made. Any writing-ink soluble in water will serve the purpose, if there is added to it some substance which will retard the oxidizing process till the copying has been done: gum-arabic, with glycerine, dextrine, or sugar may be used for this purpose. *Marking-Ink*, used for writing on linen cloth, depends for its durability on some salt of silver, usually the nitrate dissolved in water and ammonia. There is also some other coloring matter to cause it to show black while being used, and a little gum for thickening.

1. *Writing-Ink*.—The essentials of ordinary black ink are galls, sulphate of iron (known as green vitriol or green copperas), and gum; and the most important point is the regulation of the proportion of the sulphate of iron to the galls. If the former is in excess, the ink, though black at first, soon becomes brown and yellow. The gum is added to retain the coloring matter in suspension, and to prevent the mixture from being too fluid. The following prescription by Prof. Brande yields a very good ink: 'Boil six ounces of finely bruised Aleppo galls in six pints of water, then add four ounces of clean and well crystallized sulphate of iron, and four ounces of gum-arabic. Keep the whole in a wooden or glass vessel, occasionally shaken. In two months, strain, and pour off the ink into glass bottles.' The addition of a little creosote is useful as a check to the formation of mold. Stephens's ink—a blue liquid, which in a few hours after its deposition on paper on paper becomes of an intense black—is one of the most popular writing fluids: it consists essentially of gallotannate of iron, *dissolved* in sulphate of indigo, while in ordinary ink the coloring matter is merely *suspended* by means of the gum. Runge, a German chemist, has discovered a simple and cheap black writing fluid, prepared from chromate of potash and a solution of logwood, which possesses the properties of forming no deposit, of adhering strongly

INK.

to the paper, of being unaffected by exposure to water or acids, and of neither acting on nor being acted on by steel pens. Unfortunately, exposure to the air has been found to decompose it, separating its coloring matter. It has been suggested that soda might operate as a corrective for this.

Various recipes for *indelible inks* have at different times been published. Dr. Normandy asserts that the ink obtained by the following combination cannot be obliterated or defaced by any known chemical agent: 6 lbs. of Frankfurt black (supposed to be a charcoal obtained from grape and vine lees, peach-kernels, and bone-shavings) must be ground with mucilage, formed by adding 5 lbs. of gum-arabic to 15 gallons of water, and the mixture strained through coarse flannel; 1 lb. of oxalic acid is then added, with as much decoction of cochineal or sulphate of indigo as will give the required shade.

Red Inks are of two kinds, one variety consisting essentially of the tinctorial matter of Brazil-wood, and the other prepared from cochineal or carmine. Stephens's red ink, one of the best of these preparations, is obtained as follows: 'Add to a quantity of common carbonate of potash, soda, or ammonia, twice its weight of crude argol in powder. When the effervescence has ceased, decant or filter the solution from the insoluble matter. To this fluid add by measure half its quantity of oxalate of alumina, prepared by dissolving damp, newly precipitated alumina in as small a quantity as possible of a concentrated solution of oxalic acid. The mixture thus prepared is next colored, when cold, with bruised or powdered cochineal, and after standing for 48 hours is strained, when it is fit for use.' Muspratt's *Chemistry*, II, 378).

Blue Inks are now made either directly or indirectly from Prussian blue. Stephens's unchangeable blue ink is formed by dissolving this salt (first well washed in a dilute mineral acid) in an aqueous solution of oxalic acid. Ink of which Prussian blue is the basis, is unaffected by any of the numerous physical causes which operate injuriously on black ink, unless it be exposed to a strong light, when the iron (which exists as a sesquioxide in Prussian blue) becomes deoxidized, and causes the color of this ink to fade; but on removing the writing from the influence of light the color is restored.

Purple, green, and yellow inks—also gold, bronze, etc.—are made, but not much used.

Sympathetic Inks leave no trace of color on the paper, but when exposed to heat or chemical action of some kind, become more or less distinctly apparent. The following are a few of the principal kinds of this class of compounds. On writing with a solution of sugar (acetate) of lead or of ternitrate of bismuth, and washing the paper with a solution of hydrosulphuric acid (sulphuretted hydrogen), the letters come out *black*. On writing with a solution of nitrate of cobalt, and washing the paper with a solution of oxalic acid, the letters come out *blue*. On writing with a solution of subacetate of lead, and washing the paper with a solution of iodide of potassium, the letters come out

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yellow; or on writing with a dilute solution of chloride of copper, and gently heating the paper, the letters previously invisible assume a beautiful *yellow* tint, which disappears on cooling. On writing with a solution of arsenite of potash, and washing the paper with a solution of nitrate of copper, the letters come out *green*.

2. *Printing-Ink* is a soft glossy compound, altogether different in its composition from the inks above described. The following are according to Mr. Underwood (in the paper already referred to), the necessary conditions of a good printing-ink: 1. It must distribute freely; 2. It must have much greater affinity for the paper than for the type; 3. It must dry almost immediately on the paper, but not dry at all on the type or rollers; this is a great desideratum, especially for newspapers; 4. It should be literally proof against the effects of time and chemical reagents, and should never change color. It is prepared by boiling the best linseed oil in an iron pot, kindling and allowing it to burn for a short time; by this operation the oil acquires the necessary drying quality. After being again boiled, resin is dissolved in it, to communicate body to the fluid, which now somewhat resembles Canadian balsam. The coloring matter—lamp-black for black ink; carmine, lake, vermilion, etc., for red ink; indigo or Prussian blue for blue ink; lemon and orange chrome (chromate and bichromate of lead), or gamboge, for yellow ink, etc.—is then added to the hot mixture, and the whole is drawn off, and finally ground into a smooth uniform paste.

In Lithography, a *writing* and a *printing-ink* are employed, both of which differ altogether from the compounds above described. The writing-ink is composed, according to Muspratt, of the following materials: shellac, soap, white wax, and tallow in certain proportions, to which is added a strong solution of gum-sandarac, and it is colored with lamp-black; while the printing-ink, employed to take impressions on paper from engraved plates, with a view to their transference to the stone, is composed of tallow, wax, soap, shellac, gum-mastic, black pitch, and lamp-black.

INKBERRY, *ing-k'ber-rĭ*, (*Ilex glabra*): beautiful shrub formerly known as *prinos glaber*, but now classed with the holly family. It attains a height of 2–5 ft.; has slender flexible stems, oblong leathery leaves, dark green and with shiny upper surface, and small axillary flowers which produce small black berries. It grows on sandy soil along the Atlantic coast from New England to Florida. It is very popular among florists for decoration and bouquet uses, and is largely cultivated in s. N. J., for the New York and Philadelphia floral markets.

INKERMANN, *ing-kér-mán'*: small Tartar village in the Crimea, near the e. extremity of the harbor of Sevastopol; memorable for a battle during the Russian war, between an army of Russians 60,000 strong, and detachments of allied forces of about 14,000 troops actually engaged. At about 6 o'clock in the morning, 1854, Nov. 5, the Russians, who had

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marched w. from Sevastopol, along the s. shore of the harbor, and whose movements were concealed by the darkness and a thick, drizzling rain, appeared crowding up the slopes of the plateau to the s., on which the allies were posted. Here a handful of men, about 1,400 strong, a portion of the 'Household Guards,' made a most heroic stand for six hours against a body of Russians probably ten times as numerous. Reinforcements, both English and French, coming up to the rescue, the Russians were finally driven from the field.

INKLE, n. *ĩngk'l* [F. *ligneu*; OF. *lignel*, strong thread used by shoemakers and saddlers—from L. *linēōlūm*, a little line—from *linēā*, a string of hemp or flax]: a kind of broad linen tape; bleached yarn.

INKLING, n. *ĩngk'ling* [Dan. *ymple*, to whisper, to spread a rumor: Icel. *ymta*, to whisper, to rumor; *uml*, a murmur]: a hint or whisper of some intelligence; an intimation.

INLACE, a. *ĩn-lās'* [*in*, into, and *lace*]: to embellish with work resembling lace. **INLA'CING**, imp. **INLACED'**, pp. *-lāst'*.

INLAID, *ĩn-lād'*: see under **INLAY**.

INLAND, a. *ĩn'lānd* [*in*, into, and *land*]: interior; remote or distant from the sea; domestic; not foreign; in *OE.*, civilized, as opposed to *outlandish*, which see: N. interior part of a country. **IN'LANDER**, n. a dweller remote from the sea. **INLAND BILLS**, bills of exchange drawn and payable in the same country. **INLAND TRADE**, the home trade in goods spread over the country, and which does not pass by sea. **INLAND REVENUE**, that portion of the national income which is derived from stamps, taxes, and excise: see **CUSTOMS**. *Note.*—**INLAND** properly signifies, 'an accessible part of the country, a place near some great town or centre'—in contradistinction to **UPLAND**, 'a remote country district where manners were supposed to be rough and somewhat uncivilized.'

INLAY, v. *ĩn-lā'* [*in*, into, and *lay*]: to ornament a surface by inserting thin pieces of different color or material, e g. ivory, pearl, fine wood, metal, etc. **INLAY'ING**, imp.: N. the art of inserting ivory, fine wood, metal, etc., for decorative purposes. **INLAID**, pp. and pt. *ĩn-lād'*. **INLAY'ER**, n. one who.—*Inlaying* wood of one color with others of different colors is now designated usually by the French term *marqueterie*. Metal of one kind is inlaid with other kinds, often with very beautiful effects. When steel is inlaid with gold or brass, it is usually called *Damascene work*. One variety produced in India is called *Kuft-gori*—in this, the inlaid metal, usually gold, occupies more of the surface than the metal forming the ground. Another beautiful variety of Indian inlaying is called *Tuten-ague* or *Bedery-work*, which consists in making the article to be inlaid, most frequently a hookah-bowl, of an alloy consisting of copper one part to pewter four parts. This is hard, but is easily cut; the pattern is then engraved, and little

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pieces of thin silver cut to the desired forms are dexterously hammered into the spaces thus cut out to receive them. Ivory, pearl, shell, bone, tortoise-shell, are favorite substances for inlaying wood; and stone or marble is inlaid with an immense variety of colored stones. In the art of stone inlaying, the Florentines have long held the palm; their favorite work is black marble, with inlaid figures of brilliant colored stones; this work is called *pietra dura*, or Florentine work. Very beautiful work of this kind, excelling the Florentine, is now made in the imperial works at St. Petersburg, where the art has of late been sedulously cultivated by the Russian government. This art was always a favorite in Delhi and Agra, where some of the most exquisite work is still produced. Usually, in the Indian work, white marble forms the groundwork, and the figures are formed of carnelian, jasper, agate, jade, lapis-lazuli, and other costly hard stones. No stone-inlaying has ever rivalled the inlaid marble walls of the celebrated Taj Mahal, tomb of the sultana of Shah Jehan, at Agra. The designs are very artistic, the execution almost marvellous, and the harmony of color produced by the different stone is most beautiful. Many other materials than those mentioned are used for inlaying; and there is a style of inlaid work in which small squares of colored stone, glass, or pottery, are made to form pictorial and artistic decorations; this is called Mosaic-work (q.v.).

INLET, n. *in'let* [*in*, into, and *let*]: a small bay or recess on the shore of a lake, sea, or river, and extending into the land; a place of ingress; a passage into.

INLIER, n. *in'li-er* [*in*, into, and *lier*]: in *geol.*, the converse of *outlier*; a space occupied by one formation, which is completely surrounded by another that rests upon it.

IN LIMINE, *in līm'ī-ně* [L. *limen*, a door, an entrance]: in the entrance; from the first.

INLY, a. *in'li* [AS. *inlic*, internal]: internal; inward; secret: **AD.** internally; within.

INMAN, *in'man*, **HENRY**: 1801, Oct. 28—1846, Jan. 17; b. Utica, N. Y.: painter. He studied painting with John W. Jarvis, opened a studio for portrait-painting in Boston 1822, removed to Philadelphia 1832, thence to Mount Holly, N. J. for the benefit of country air, and soon afterward to New York. In 1843, though failing in health, he went to England and spent a year painting portraits of Macaulay, Wordsworth, Chalmers, and Lord Cottenham, on orders from American admirers. He returned in the autumn 1845, secured a commission for one of the panels in the rotunda of the national capitol, and died soon afterward. He was a founder and the first vice-pres. of the National Acad. of Design, introduced lithography into the United States, was best known for his portraits, painted numerous genre and historical works and landscapes, and was an entertaining writer.—His son, **JOHN O'BRIEN I.**, b. New York, 1828, June 10, studied painting with his father painted

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portraits, genre pictures and flower-pieces, spent 1866-79 in Paris and Rome, and on his return settled in New York.

INMATE, n. *in'māt* [Icel. *inni*, within, and *mate*]: a dweller in a house; a member of the same family or household; a lodger; in *OE.*, admitted as an inmate.

INMOST, a. *in'möst* [*in*, within, and *most*: *AS.* *innemest*]: furthest within; remotest from the surface.

INN, n. *in* [Icel. *inni*, a house—from *inni*, within: *AS.* *inn*, a house—from *inn*, within: comp. Gael. *ion*, suitable, convenient; *ionad*, a place, an apartment]: formerly, a house; a mansion; a house for lodging and entertaining travellers; a tavern: V. in *OE.*, to house; to put under cover; to lodge. **INN'ING**, imp. **INNED**, pp. *ind*. **INN'KEEPER**, n. one who keeps an inn or tavern (see **INN**, below). **INNS OF COURT** (see below). **INNING** (see below).

INN (ancient *Enus*): river of Germany, the most important Alpine affluent of the Danube. It rises in the s. of the Swiss canton of Grisons, 4,293 ft. above sea-level, and flowing n.e. through that canton forms the valley of the Engadine (q.v.). It maintains generally a n.e. course to its junction with the Danube. Leaving Switzerland, it enters the Austrian dominions at the village of Finstermunz, flows through the crown land of Tyrol, and crosses the s.e. angle of Bavaria, after which, forming the boundary between Bavaria and Upper Austria, it enters the Danube at Passau, after a course of 285 m. Its principal affluent is the Salza from the south. It is regularly navigable from the town of Hall, 8 m. below Innsbruck. At its junction with the Danube, the Inn is broader than the Danube itself.

INN (see **HOTEL**), in Law: house of entertainment for travellers, which any person may set up without license like any other trade. It is when excisable liquors are sold that a license is required. Public-houses and ale-houses, however, are often practically synonymous terms with inns for the innkeeper almost invariably finds it expedient to obtain the necessary license to sell spirits and beer. See **BEER ACTS**: **PUBLIC-HOUSES**: **LICENSE**, **HIGH**. The rights and duties of innkeepers irrespective of the license will here be noticed. In the first place, though public houses are always inns, yet beer houses are not so, the latter being merely shops for selling beer and a few other liquors, the distinguishing characteristic of the public-house being, that lodging and refreshment or food may be had on the premises by all comers. Taverns are chiefly for the sale of wines and liquors; victualling-houses or restaurants, for the sale of victuals; coffee-houses and hotels also are varieties, all of which may or may not in law be inns, according as they do or do not hold themselves out to give food, drink, and lodging to all comers; and it is not at all necessary that any sign-board be put up to distinguish the inn.

One of the incidents of an innkeeper is, that he is bound to open his house to all travellers without distinction, and has no option to refuse such refreshment, shelter, and accommodation as he possesses, provided the person who

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applies is of the description of a traveller, and able and ready to pay the customary hire, and is not drunk or disorderly, or tainted with infectious disease. He is, of course, bound to give only such accommodation as he has. If the traveller has a horse and luggage, the innkeeper is bound to receive these also, if he has accommodation, provided the traveller himself intends to lodge there as a guest. But the traveller is not entitled to select whatever room he pleases, and if he will not accept such reasonable accommodation as is offered, the innkeeper can order him to leave the house. As some compensation for this compulsory hospitality, the innkeeper is allowed certain privileges; thus, he has a lien on the horse and carriage or goods of the guest for that part of the bill or reckoning applicable to each respectively—i.e., he can keep these until he is paid for the keep, even though they are not the property of the guest. But he cannot detain the person of his guest until payment is made, for if so, a man might be imprisoned for life without any legal process or adjudication. While, however, an innkeeper has this remedy for his score, he is also under great responsibility for the safety of his guests and their goods. By the Roman law, under the edict *nautæ, cauponæ, stabularii*, he was bound to restore safely whatever goods of his guests were intrusted to him, unless some *damnum fatale*, or some act of God, prevented his doing so. The principle of this rule has been adopted by the law of England, and thence in the law in the United States. Hence, if the guest be robbed of his goods at the inn, the innkeeper is liable, unless the robbery was caused by the guest's servant or companion, or by his own gross negligence, as, for example, by leaving a box containing money in a public part of the house after exposing its contents to the bystanders. So the innkeeper will be excused if the guest took upon himself the charge of his own goods, yet the guest does not take that charge by merely accepting from the landlord the key of the room, though that may be an element in the question. A guest who takes all reasonable precaution—as, for example, locking his room-door—and is yet robbed, has therefore a good claim on the landlord for indemnity; and the landlord will not escape liability by putting up a notice in his rooms, that he will not be answerable for such losses, otherwise guests would have no protection, for they are very much at the mercy of the keepers of such houses. In many of the states in this country, however, the laws do not hold an innkeeper responsible for loss of 'money, jewels, and ornaments,' if he has provided a safe for the use of his guests which they, being notified, neglect to avail themselves of.—A boarder, not a traveller, merely taking his meals in a restaurant attached to an inn, is not in the legal sense a 'guest' of the inn itself, and has not precisely the same claim in case of loss. It has been attempted to extend the common-law liability of innkeepers for the safety of the goods of their guests to ordinary lodging-house keepers, but the courts have held that an ordinary boarding-house

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keeper or lodging-house keeper (and similarly an inn-keeper in regard to boarders not travellers) is responsible for only ordinary care, i.e., such care as he takes of his own goods. He must, it is true, be careful in selecting his servants, but he is not bound absolutely to return the goods safe merely because they were in his house with the lodger.

INNATE, a. *in'nāt* [L. *innātūs*, inborn, natural—from *in*, into; *nātūs*, born: It. *innato*]: inborn; native; natural; in *bot.*, applied to anthers when attached to the top of the filament. **IN'NATELY**, ad. *-lī*. **IN'NATENESS**, n. quality of being innate. **INNATE IDEAS**, see **COMMON SENSE**, **THE PHILOSOPHY OF**.

INNAVIGABLE, a. *in nāv'ī-gā-bl* [F. *innavigable*—from L. *innāvigābilis*]: in *OE.*, impassable by ships; unnavi-gable.

INNER, a. *in'ner* [AS. *inn*; Icel. *inni*, within]: comparative of *in*; further in; not outward; interior; inward; internal. **IN'MOST**, or **IN'NERMOST**, a superl. of *in*; furthest inward. **INNER HOUSE**, in Scotland, the higher divisions of the Court of Session (q.v.).

INNERVE, v. *in-nerv'* [L. *in*, into; *nervus*, a nerve or sinew]: to invigorate; to strengthen. **INNERV'ING**, imp. **INNERVED'**, pp. *-nervd'*. **IN'NERVA'TION**, n. *-vā'shūr*, the distribution of nerves by which nervous energy is given to any animal, or to a part; the functions of the nervous system.

INNES, *in'ēs*, **THOMAS**: 1662–1744, Jan. 28: b. Drum-gask, county of Aberdeen, Scotland: author of *A Critical Essay on the Ancient Inhabitants of Scotland*. At the age of 15, he was sent by his father, a zealous Rom. Catholic, to the Univ. of Paris. He was ordained priest 1691, took his degree master of arts 1694, and for some years assisted his elder brother, Lewis, principal of the Scots College at Paris, in arranging the valuable records deposited there by James Beaton, last Rom. Cath. Abp. of Glasgow. In 1698, I. returned to Scotland, and officiated as a missionary priest at Inveravon, in the old diocese of Murray. He again went to Paris 1701, and passed the rest of his life mostly at the Scots College. The great object of his life was to write the true history of Scotland, and to refute the fabulous narratives generally received by his countrymen. The latter part of his task was accomplished by his *Critical Essay*, pub. London 1729, in 2 vols. The difficulties in the way of his inquiry after the true Scottish history were very great. In I.'s time, the materials were for the most part in manuscripts, whose existence was unknown except to a few antiquaries. Every subsequent writer on this portion of Scottish history has admitted the high merit and the practical usefulness of I.'s work. He gave his ready aid to all engaged in pursuits similar to his own, particularly to Bishop Keith, and to Dr. Wilkins. He died at Paris. The *Critical Essay* was reprinted at Edinburgh 1880 in a series of 'Historians of Scotland.' Innes wrote one vol. of a *Civil and Ecclesiasti-*

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cal History of Scotland, extending from the introduction of Christianity to the death of St. Columba 597; and another vol. was left incomplete, bringing down the narrative to the year 821. The whole was printed in one vol. by the Spalding Club 1853, and though imperfect is valuable. The author had learning, acuteness, and moderation, and loved truth better even than he loved his church. See preface to his *Civil and Ecclesiastical History*.

INNESS, *in'és*, GEORGE: landscape-painter: b. Newburg, N. Y., 1825, May 1. He removed to Newark, N. J., at an early age, began studying drawing and oil-painting there, went to New York 1841, and studied engraving till ill-health compelled him to abandon it, studied painting one month with Regis Gignoux 1845, and began his career as a landscape-painter in New York the same year. He has suffered from ill-health since boyhood, and has resided in Boston, Eagleswood, N. J., Florence, Rome, and since 1875 in New York. He became a National academician 1868. He exhibited *American Sunset* at the Paris exhibition 1867; *St. Peter's, Rome, from the Tiber*, and *View near Medfield, Mass.*, in that of 1878, and *An Old Roadway, Long Island*, in the National Acad. the same year; *Under the Green Wood*, National Acad. 1882; *A Summer Morning*, 1883; *A Sunset*, and *A Day in June*, 1885; and *In the Woods, Sunset on the Sea-Shore*, and *Durham Meadows*, 1886.—His son, GEORGE I., b. Paris, 1854, Jan. 5, studied painting with his father in Rome, and with Bonnat in Paris, applied himself to animal painting, made his first exhibition at the National Acad. 1877, and for several years has lived and painted at Montclair, N. J. He d. 1894, Aug. 3.

INNING, n. *in'ing* [from *in*: AS. *inn*; Icel. *inni*, within (see INN)]: in *base-ball* and *cricket*, the time during which a side is batting; a turn for using the bat; the time during which a person or party is in office. INNINGS, lands recovered from the sea. INNING, n. *in'ing* [OE. *inn*, to house or secure, as corn]: the securing or safely housing of corn when ripe. HAD A LONG INNING, a long run of good luck.

INNISCAT'TERY: see SCATTERY ISLAND.

INNISHER'KIN: small island on the s. coast of Ireland, belonging to the county of Cork, from the shore of which it is separated by a channel a quarter of a m. in width; about one m. n.e. of Clear Island. It is well cultivated, and contains some good slate-quarries. Pop. more than 1,000.

INNOCENT, a. *in'nō-sěnt* [F. *innocent*—from L. *innōcens*, or *innōcen'tem*, harmless, blameless—from *in*, not; *nōcēō*, I hurt: It. *innocente*]: not producing injury; harmless in effects; free from crime or evil actions; blameless; pure; spotless: N. *literally*, one free from guilt or guile; a person deficient in intellect; an idiot. IN'NOCENTLY, ad. *-lī*. IN'NOCENCE, n. *-sěns* [F.—L.], or IN'NOCENCY, n. *-sěn-sī*, freedom from any quality that can injure; freedom from some particular sin or guilt; purity or simplicity of heart. INNOCENTS, n. plu., see INNOCENTS, HOLY, FEAST OF THE.—

INNOCENT I.—INNOCENT III.

SYN. of 'innocent a.': inoffensive; harmless; guiltless; upright; immaculate; innoxious; unblamable; guileless; faultless; unhurtful; innocuous; lawful; permitted; in *OE.*, ignorant; idiotic; imbecile.

INNOCENT I., Pope: ruled 402–417; native of Albano; d. 417. Next to the pontificate of Leo the Great, that of Innocent I. forms the most important epoch in the history of the relations of the see of Rome with the other churches, both of the East and of the West. Under him, according to Prot. historians, the system of naming legates to act in the name of the Roman bishop in different portions of the church originated; while Rom. Catholics admit that at least it then received fuller organization and development. He was earnest and vigorous in enforcing the celibacy of the clergy. He maintained, with firm hand, the right of the Bishop of Rome to receive and to judge appeals from other churches, and his letters abound with assertions of universal jurisdiction, to which Rom. Catholics appeal as evidence of the early exercise of the Roman primacy, and from which Dean Milman infers that there had already 'dawned upon his mind the conception of Rome's universal ecclesiastical supremacy, dim as yet and shadowy, yet full and comprehensive in its outline' (*Latin Christianity*, i. p. 87).

INNOCENT III. (LOTHARIO CONTI), Pope: next to Gregory VII., probably the greatest of those who have occupied the papal chair: 1161–1216, July 16 (ruled 1198–1216); b. Anagni; son of Count Trasimundo. After a course of much distinction at Paris, Bologna, and Rome, he was made cardinal; and 1198, was elected, at the unprecedentedly early age of 37, successor of Pope Celestine III. His pontificate is justly regarded as the culminating point of the temporal, as well as the spiritual supremacy of the Roman see; and it is freely avowed by the learned Prot. historian of Latin Christianity, that if ever the great idea of a Christian republic, with a pope at its head, was to be realized, 'none could bring more lofty or more various qualifications for its accomplishment than Innocent III.' (iv. p. 9.) Accordingly, under the impulse of his ardent but disinterested zeal for the glory of the church, almost every state and kingdom was brought into subjection. In Italy, during the minority of Frederick II. (son of Emperor Henry VI., King of Italy), who was a ward of I.'s, the authority of the pope within his own states was fully consolidated, and his influence among the other states of Italy was confirmed and extended. In Germany, he adjudicated with authority on the rival claims of Otho and Philip: and a second time he interposed effectually in behalf of his ward, Frederick II. In France, espousing the cause of the injured Ingerburga, he compelled her unworthy husband, Philip Augustus, to dismiss Agnes de Meranie, whom he had unlawfully married, and to take back Ingerburga. In Spain, he exercised a similar authority over the king of Leon, who had married within the prohibited degrees. The history of his conflict with the weak and unprincipled John of England exhibits in a light

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less favorable than do his other contests, I.'s character for consistent adherence to principle, and his lofty indifference to the suggestions of expediency; but it displays in stronger light the extent of his claims and the completeness of his supremacy. In Norway, he exercised the same authority in reference to the usurper Swero. In Aragon, he received the fealty of the king Alfonso. Even the king of Armenia, Leo, received his legates, and accepted from them the investiture of his kingdom. And, as if in order that nothing might be wanting to the completeness of his authority throughout the then known world, the Latin conquest of Constantinople, and the establishment of the Latin kingdom of Jerusalem, put an end, at least during his pontificate, to the shadowy pretensions of the eastern rivals of his power, spiritual as well as temporal. Pursuing consistently the great idea which inspired his entire career, his views of the absoluteness of the authority of the church within her own dominion were no less unbending than his notion of the universality of its extent. To him, every offense against religion was a crime against society, and, in his ideal Christian republic, every heresy was a rebellion which it was the duty of the rulers to resist and repress. It was at his call, therefore, that the crusade against the Albigenses was organized and undertaken; and though he can hardly be held responsible for the fearful excesses of cruelty into which it ran, and though at its close he used all his endeavors to procure the restitution of the lands of the young Count of Toulouse, yet it is clear from his letters that he regarded the undertaking itself not merely as lawful, but as a glorious enterprise of religion and piety. As an ecclesiastical administrator, I. holds a high place in his order. He was a vigorous guardian of public and private morality, a steady protector of the weak, zealous in the repression of simony and other abuses of the time. He prohibited the arbitrary multiplication of religious orders by private authority, but he lent all his power and influence to the remarkable spiritual movement in which the two great orders, the Franciscan and the Dominican (q.v.), had their origin. It was under him that the celebrated fourth Lateran Council was held 1215. In the following year, he was seized with his fatal illness, and died at Perugia, at the early age of 56. His works, principally letters and sermons, and a remarkable treatise *On the Misery of the Condition of Man*, were published in two vols. folio (Paris 1682). It is from these letters and decretals alone that the character of the age, and the true significance of the church-policy of this extraordinary man, can be fully understood; and it is only from a careful study of them, that the nature of his views and objects can be realized in their integrity. However earnestly men may dissent from these views, no student of mediæval history will refuse to accept Dean Milman's verdict on the career of Innocent III., that 'his high and blameless, and, in some respects, wise and gentle character, seems to approach more nearly than any one of the whole succession of Roman bishops to the ideal light of a supreme pontiff;' and that 'in him, if

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ever, may seem to be realized the churchman's highest conception of a vicar of Christ' (*Latin Christianity*, iv. 277).

IN'NOCENT XI. (BENEDETTO ODESCALCHI), Pope: 1611–1689, Aug. 12 (ruled 1676–89); b. Coms; one of the most distinguished among the popes of the 17th c. He was a vigorous and judicious reformer, and his administration is entirely free from the stain of nepotism, which had sullied the fame of many of his predecessors. But his historical celebrity is owing mainly to his contest with Louis XIV., which illustrates as well the personal character of the pontiff, as the peculiar spirit of the age. The dispute began from an attempt on the part of the pope to put an end to the abuse of the king's keeping sees vacant, in virtue of what was called the *Droit de Regale*, and appropriating their revenues. The resistance to this attempt drew forth the celebrated declarations of the French clergy as to the Gallican Liberties: see GALLICAN CHURCH. But the actual conflict regarded the immunities enjoyed by the foreign ambassadors residing in Rome, and especially the right of asylum, which they claimed not only for their own residences, but also for a certain adjoining district of the city. These districts had gradually become so many foci of crime, and of frauds upon the revenue; and the pope, resolving to put an end to so flagrant an abuse, gave notice that, while he would respect the rights of the existing ambassadors, he would not thereafter receive the credentials of any new ambassador who should not renounce these abusive claims for himself and his successors. The great powers murmured at this threat, but it was with France that the crisis occurred, on the death of the Maréchal d'Estrées. The pope renewed his notice 1687, May. Louis XIV., on the other hand, instructed his new ambassador to maintain the dignity of France, and sent a large body of military and naval officers to support his pretensions. I. persisted in refusing to grant an audience to the ambassador. Louis, in reprisal, seized on the papal territory of Avignon, and threatened to send a fleet to the coast of the Papal States, but I. was immovable; and in the end, the ambassador was compelled to return with his credentials unopened, nor was the dispute adjusted till the following pontificate.

IN'NOCENTS, HOLY, FEAST OF THE: one of the Christmas festivals, held in the Western Church Dec. 28; in the Eastern, Dec. 29, under a similar title. It is intended to commemorate the massacre of the children 'from two years old and upward' at Bethlehem: see HEROD. These children are referred to as martyrs by St. Cyprian, and still more explicitly by St. Augustine; and it is to them that the exquisite hymn of Prudentius, *Salvete Flores Martyrum*, is addressed. The concurrence of the East and West in celebrating the festival is an evidence of its antiquity. In the modern church, this feast is celebrated as a special holiday by the young, and many curious customs connected with it prevail in Rom. Cath. countries. One of these is, that in private families the children are on this

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day privileged to wear the clothes of the elders, and in some sort to exercise authority over the household in their stead. So also, in communities of nuns, the youngest sister becomes for this day superioress of the house, and exercises a sort of sportive authority over even the real superiors.

INNOCUOUS, a. *in-nók'û-ûs* [L. *innocûus*, harmless—from *in*, not; *nôcĕō*, I hurt: It. *innocuo*]: harmless in effects; safe. **INNOC'UOUSLY**, ad. *-lĭ*. **INNOC'UOUSNESS**, n. *nĕs*.

INNOMA, n. *in-nō'mă*, properly **INOMA**, *ī-nō'mă* [Gr. *inos*, a fibre, *īnos*, of a fibre]: in *med.*, a new growth of connective tissue forming a distinct isolated mass, or fibrous tumor.

INNOMINATE, a. *in-nōm'ī-nāt* [mid. L. *innominātus*, not named—from L. *in*, not; *nōmĕn*, a name]: without a name; in *anat.*, applied to a bone forming half of the pelvis, composed of three portions, the haunch-bone, the hip-bone, and the share-bone (see **PELVIS**). **INNOMINATE ARTERY** (*Arteria innominata*), first large branch given off from the arch of the aorta. It varies from an inch and a half to two inches in length, and divides into the right carotid and the right subclavian arteries: see **CIRCULATION**, **ORGANS OF**. This artery, through which all the blood to the right side of the head and neck, and to the right arm, flows, has been tied by several surgeons for aneurism of the right subclavian, but the operation has never been successful. An important fact has, however, been established, viz., that the circulation of the blood in the parts supplied by this large vessel, is re-established by anastomosis (q.v.) after the operation.

INNOVATE, v. *in'nō-vāt* [L. *innovātus*, renewed—from *in*, into; *novus*, new: It. *innovare*: F. *innover*]: to change or alter by introducing something new; to make changes. **IN'NOVATING**, imp. **IN'NOVATED**, pp. **IN'NOVATOR**, n. one who. **IN'NOVA'TION**, n. *-shŭn* [F.—L.]: change by the introduction of something new; change in established laws or practices: in *bot.*, buds in mosses: in *Scotch law*, substitution of one obligation for another—called sometimes Novation.

INNOXIOUS, n. *in-nók'shŭs* [L. *innocŭus*, harmless—from *in*, not; *noxĭus*, hurtful]: harmless; free from hurtful qualities. **INNOX'IOUSLY**, ad. *-lĭ*. **INNOX'IOUSNESS**, n.

INNSBRUCK, *ins'prūk*, or **INNSPRUCK**: capital of the Tyrol, charmingly situated on the right bank of the Inn, at its junction with the Sill, 1,900 ft. above sea-level, in a valley surrounded by mountains 6,000 to 9,200 ft. high. It is connected with the suburb of St. Nicolaus, on the left bank, by a wooden bridge, from which the name of the town (*Inn's Brücke*, Ger. the Inn's Bridge) is derived. The Inn is crossed also by a chain bridge a little below the town. The Franciscan church, or Hofkirche, architecturally uninteresting, is remarkable for its elaborate monument to Emperor Maximilian I., which, though constructed at the request of Maximilian, and intended for his burial place,

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does not contain his remains. The monument consists of a marble sarcophagus supporting the emperor's effigy in bronze, in a kneeling posture; while on both sides of the aisle are rows of monumental bronze figures, 28 in number, representing a variety of distinguished personages, male and female. In this church, 1651, Nov. 3, Christina (q.v.) of Sweden was solemnly received into the Rom. Cath. Church. The other chief buildings are the Ferdinandeum, a museum containing a collection of the productions of the Tyrol in art, literature, and natural history; and the university (founded 1672, and, after several vicissitudes, organized anew 1825), with faculties, which has now more than 500 students and about 70 professors and lecturers. I. has important manufactures of woollen cloth, silk, gloves, ribbons, and carved work, as well as a flourishing transit trade. It is connected with Munich by railway, and a railroad across the Brenner Pass, completed 1867, unites I. with Botzen and Verona. Pop. (1890) 23,320.

INNS OF COURT: certain voluntary societies which have the exclusive right of calling persons to the English bar. There are four such societies in London, viz., the Inner Temple, the Middle Temple, Lincoln's Inn, and Gray's Inn, named from their places of meeting and residence, formerly the mansions of Lord Gray, Earl of Lincoln, etc. Each of those inns possesses certain smaller inns, which are mere collections of houses or chambers, as Clifford's Inn, New Inn, Furnival's Inn, etc. The four inns are each governed by a committee or board, called the benchers, who are generally queen's counsel or senior counsel, each new member being chosen by the existing benchers. Each inn has also a local habitation, consisting of a large tract of houses or chambers, which are in general occupied exclusively by barristers, and sometimes by attorneys, and are a source of great wealth. Each inn maintains a chapel with a preacher and other clergy, with the services of the Church of England. The Inner and the Middle Temple occupy jointly the ancient and beautiful Temple Church (see **TEMPLARS, KNIGHTS: TEMPLE**). Each inn is self-governing, and quite distinct from the others, all, however, possessing equal privileges; but latterly, they have joined in imposing certain educational tests for the admission of students. It is entirely in the discretion of an inn of court to admit any particular person as a member, for no member of the public has an absolute right to be called to the bar, there being no mode of compelling the inn to state its reasons for refusal. But, practically, no objection is ever made to the admission of any person of good character. Each inn has also the power of disbarring its members, that is, of withdrawing from them the right of practicing as counsel. This right has been rarely exercised, but of late years there have been examples of persons abusing their profession, and indulging in dishonest practices; in such cases, the inn has its own mode of inquiring into the facts affecting the character of a member, and is not bound to make the investigation public. By this high controlling power over

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its members, a higher character is supposed to be given to the bar as a body, than if each individual was left to his own devices, unchecked, except by the law: see BARRISTER.

INNUENDO, n. *in'nū-ĕn'dō*, **IN'NUEN'DOES**, n. plu. *-dōz* [L. *innuen'dum*, a nodding to or towards, an intimation; *innuen'do*, by an intimation—from *innūĕns*, nodding to—from *in*, to, towards; *nūō*, I nod: It. *innuendo*—*lit.*, suggestion by a nod]: an indirect or oblique hint; an indirect intimation or reference: in *law*, part of a pleading in cases of libel and slander, pointing out what and who was meant by the libellous matter.—**SYN.**: insinuation; representation; suggestion; hint; intimation; reference.

INNUIT: see **ESQUIMAUX**.

INNUMERABLE, a. *in-nū'mēr-ă-bl* [F. *innumérable*—from L. *innumērābilis*, countless—from *in*, not; *numērŭs*, a number: It. *innumerabile*]: that cannot be numbered for multitude; countless. **INNUMERABLY**, ad. *-blĭ*. **INNUMERABILITY**, n. *-bĭl'ĭ-tĭ*. **INNUMERABLENESS**, n. *-bl-nĕs*.

INNUTRITIOUS, a. *in'nū-trĭsh'ŭs* [*in*, not, and *nutritious*]: not supplying nourishment. **INNUTRITIVE**, a *-trĭ-tĭv*, not nourishing. **INNUTRITION**, n. *-trĭsh'ŭn*, want of nutrition.

INO, *ĭ'no*, in Greek Mythology: daughter of Cadmus and Harmonia, who was secretly married to Athamas, King of Thebes, after he had divorced Nephele. Athamas had two children, Phryxus and Helle, by Nephele; and two, Melicerta and Learchus, by I. As the children of the latter grew up, I. became intense in her hatred against Nephele's children, because they had prior claims to the throne, and persuaded the king that the angry gods would be appeased only with the death of his first-born children. Nephele heard of I's plans, and carried her children to Colchis. The anger of Juno then fell on I. and the king. The latter was maddened, and believing I. to be a lioness and her children whelps, pursued them and killed Learchus. I. escaped his fury and with Melicerta leaped into the sea, when Neptune, moved to pity, changed her into a sea goddess by the name of Leucothea, and Melicerta into a sea god known as Palæmon. Variations of this myth are found in the tragedies of Æschylus, Sophocles, Euripides, and Achæus.

INOBSERVANT, a. *in'ōb-zĕr'vănt* [*in*, not, and *observant*: L. *inobservan'tiă*, inattention, negligence]: not taking notice. **INOBSERVANTLY**, ad. *-lĭ*. **INOBSERVABLE**, a. *-vă-bl*, not capable of being observed. **INOBSERVANCE**, n. *-văns*, heedlessness; negligence; disregard.

INOCARPIN, n. *in o-kâr'pĭn* [mod. L. *inocarpus*]: a red coloring-matter contained in the juice of the *Inocarpus edulis*. The juice is at first colorless, but on exposure to the air turns red, and dries up to a gummy mass. It is soluble in water and in alcohol, but insoluble in ether.

INOCARPOUS, a. *in'ō-kâr'pŭs* [Gr. *īs*, or *ĭnă*, a fibre; *karpos*, fruit]: having fibrous fruit.

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INOCARPUS (*I. edulis*): the *Mape* or *Rata* of the South Sea Islands; a tree important for its fruit, a nut covered with a thin fibrous husk, which supplies the natives with a considerable part of their food, and is sometimes called the South Sea Island chestnut. The fruit is pulled in a green state and roasted. The tree is very beautiful, of stately growth and fine foliage; the leaves oblong, six or eight inches long, evergreen, but of delicate texture. It is one of those which, as they advance in age, instead of increasing uniformly in thickness, throw out buttresses to support the trunk. Small projections first appear, extending in nearly straight lines from the root to the branches, which finally become like so many planks covered with bark. The central stem continues for many years perhaps only six or seven inches in diameter, while the buttresses, two or three inches thick, extend from it at the bottom two, three, or four ft. These natural planks are used for paddles of canoes and other purposes.

INOCERAMUS, n. *ī'nō-s'ŕ'ă-mŭs* [Gr. *īs*, or *īnă*, a fibre; *kerāmos*, an earthen vessel]: in *geol.*, a genus of fossil bivalves, found in the secondary formations, belonging to the wing-shells or pearl-oysters—so named from the fibrous structure of their shells.

INOCULATE, v. *īn-ōk'ū-lāt* [L. *inoculātus*, ingrafted by inserting an eye or bud of one tree into another—from *in*, into; *oculus*, an eye: F. *inoculer*, to inoculate—*lit.*, to put in an eye]: to communicate a mild form of a disease, as the *small-pox*, by inserting infectious matter into the punctured skin or flesh; to bud; to propagate a plant by inserting one of its buds or eyes into another stock; to furnish a bud for, or insert a bud into. **INOC'ULATING**, imp. **INOC'ULATED**, pp. **INOC'ULATOR**, n. *-lā-tēr*, one who. **INOC'ULA'TION**, n. *-lā'shŭn* [F.—L.]: act of inserting the eye or bud of a plant into another stock with the view of producing fruits or flowers of different kind: in *med. practice*, see below.

INOCULA'TION: act or practice of communicating disease by inserting contagious matter into the punctured skin. If the matter of a variolous (or small-pox) pustule, taken after the commencement of the eighth day, be inserted in or beneath the skin of a person who has not previously had small-pox, the following phenomena are induced: 1. Local inflammation is set up; 2. At the end of six days there is fever similar to that of small-pox; 3. After three more days, there is a more or less abundant eruption of pustules. This process is termed *I.*, and the disease thus produced is denominated inoculated small-pox. The disease produced in this artificial manner is much simpler and less dangerous than ordinary small-pox; and as it was an almost certain means of preventing a subsequent attack of the ordinary disease, *I.* was much practiced till the discovery of the antivariolous power of vaccination, about 1796. This was the year in which Jenner inoculated his first case (the boy Phipps) with matter taken from the hand of a girl who had been directly infected by the cow. He was aware

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of the protective efficiency of cow-pox in 1770. For other kinds of I., see GERM THEORY: SYPHILIZATION.

The importance of I. was recognized in the East at a very early period. According to Dr. Collinson (*Small-pox and Vaccination Historically and Medically Considered*, p. 14), the Chinese had practiced this process from the 6th c., and the Brahmans from a very remote antiquity. In Persia, Armenia, and Georgia it was in use, and it is said to have been employed even in Scotland and Wales. It was not, however, till Lady Mary Wortley Montagu wrote her celebrated letter from Adrianople, 1717, that the operation became generally known in Britain. In that letter she writes: 'The small-pox, so fatal and so general amongst us, is here entirely harmless, by the invention of *engrafting*, which is the term they give it. Every year, thousands undergo the operation. There is no example of any one who has died of it, and you may believe that I am well satisfied of the safety of this experiment, since I intend to try it on my dear little son.' Four years afterward, she had her daughter publicly inoculated in England; the experiment was then performed successfully on six condemned criminals at Newgate, and on the strength of these successful cases, 'the critical course was taken of inoculating two children of Caroline, Princess of Wales, which gave a sanction to the practice.'—Collinson, *op. cit.* p. 15.

I. was not, however, thoroughly established for more than a quarter of a century after its introduction. It met with virulent opposition from the medical profession and the clergy. A sermon is extant, preached, 1722, by the Rev. Edward Massey, in which it is asserted that 'Job's distemper was confluent small-pox, and that he had been inoculated by the devil.' The great drawback to I. turned out, however, to be this: while it was invaluable to him who underwent the operation, and completely guarded him from the natural disease in its severe form, its effect on the community at large was pernicious, in keeping alive the natural disease, and increasing its spread among those not protected by inoculation. While one in five or six of those who took the natural disease died, the average number of deaths at the Inoculation Hospital was only 3 in 1,000; yet, according to the authority of Heberden, in every thousand deaths within the bills of mortality in the first 30 years of the 18th c. (before I. was at all general), only 74 were due to small-pox. The deaths from this disease amounted to 95 in 1,000 during the last 30 years of the century; so that, notwithstanding the preservative effects of I. on almost all who were operated on, the total number of deaths from this disease increased in 100 years in the ratio of about 5 to 4. Moore (*The History of Small-pox*, 1815) states that, at the beginning of the 18th c., about one-fourteenth of the population died of small-pox; whereas, at the latter end of the same century, the number (notwithstanding, or perhaps rather in consequence of I.) had increased to one-tenth; and this immense consumption of human lives was not the total evil, for many survivors were left with the partial or entire loss of sight and with destroyed

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constitutions. Thus the benefits expected from I. were not realized, and small-pox would doubtless have gone on increasing in its destructive power, if it had not been checked by Jenner's invaluable discovery of VACCINATION (q.v.). Vaccination is done with the cow-pox virus, I. with the small-pox virus. I. is now discontinued and illegal. See SMALL-POX.

INODOROUS, a. *in-ō'dér-ūs* [L. *inōdōrūs*, without smell—from *in*, not; *ōdōr*, scent, smell: It. *inodoro*: F. *inodore*]: wanting scent; having no smell.

INOFFENSIVE, a. *in'ōf-fēn'siv* [F. *inoffensif*: *in*, not, and Eng. *offensive*]: harmless; giving no offense, provocation, or uneasiness; doing no injury or mischief. **IN'OFFENSIVELY**, ad. -*lī*. **IN'OFFENSIVENESS**, n. -*nēs*.

INOFFICIAL, a. *in'ōf-f'ish'āl* [*in*, not, and *official*]: not proceeding from the proper officer or from proper authority; not accompanied with usual or official forms. **IN'OFFICIALLY**, ad. -*lī*.

INOFFICIOUS TES'TAMENT: a will whereby near relatives have not been provided for by the testator.

INOPERATIVE, a. *in-ōp'ér-ā-tiv* [*in*, not, and *operative*]: producing no effect; not active.

INOPERCULAR, a. *in'ō-pēr'kū-lér* [L. *in*, not; *oper'cūlūm*, a lid]: without an operculum or lid—applied to certain univalve shells. **INOPERCULATA**, n. plu. *in'ō-per-kū-lā'tā*, certain univalve shells in which there is no shelly or horny plate to close the shell when the animal is withdrawn within it.

INOOPORTUNE, a. *in-ōp'pōr-tūn* [F. *inopportun*—from L. *inopportūnūs*, unsuitable—from *in*, not; *opportūnus*, suitable]: inconvenient; unseasonable. **INOP'ORTUNELY**, ad. -*lī*.

INOPPRESSIVE, a. *in'ōp-prēs'iv* [*in*, not, and *oppressive*]: not burdensome.

INORDINATE, a. *in-ōr'dī-nāt* [L. *inordīnātūs*, irregular—from *in*, into; *ordīnō*, I put in order]: irregular; not limited to rules; excessive. **INOR'DINATELY**, ad. -*lī*. **INOR'DINATENESS**, n. -*nēs*, want of regularity; excess.—**SYN.** of 'inordinate': immoderate; extravagant; exorbitant; unlimited; disorderly.

INORGANIC, a. *in'ōr-gān'ik*, or **IN'ORGAN'ICAL**, a. -*ī-kāl* [*in*, not, and *organic*: F. *inorganique*]: not endowed with the organs or instruments of life; not produced by vital action; in *med.*, not apparently connected with change in structure. **IN'ORGAN'ICALLY**, ad. -*lī*. **INOR'GANIZED**, a. -*īzd*, not having organic structure, as earths or metals.

INOSCULATE, v. *in-ōs'kū-lāt* [L. *in*, into; *oscūlātus*, kissed—from *os'cūlūm*, a little mouth]: to unite as two vessels in a living body; to unite by contact. **INOS'CULATING**, imp. **INOS'CULATED**, pp. **INOS'CULA'TION**, n. -*shūn*, union by mouths or ducts; in *bot.*, grafting or inserting buds in other stocks.

INOSIA—IN PARTIBUS.

INOS'IA, or IN'OSITE (formerly PHASEO-MANNITE): see SUGAR.

INOSIN, INOSINIC: see under INOSITE.

INOSITE, n. *ĩn'ō-sīt*, or INOSIN, n. *ĩn'ō-sĩn* [Gr. *īs*, fibre or muscle, *ĩnos*, of fibre]: saccharine principle obtained from the juice of flesh, which is not susceptible of alcoholic fermentation; muscle sugar; formerly known as *phaseo-mannite*: see SUGAR. The name Inosite is applied also to a substance forming a successful imitation of red coral. INOSINIC, a. *ĩn ō-sĩn'ik*, applied to an acid obtained from muscular fibre. INOSINATE, n. *ĩn-ōs'ĩn-āt*, the combination of inosinic acid with a base. INOSURIA, n. *ĩn'ō-sũ'rĩ-ǎ* [Gr. *ourēō*, I make water]: the muscle-sugar when found in morbid urine.

INO'UYE KAYO'RU, Count: statesman: b. Choshiu, Japan. He belongs to an aristocratic family, was educated in Europe, and entered public life in Japan, 1864. After the restoration of the ancient system of national govt., 1868, he attracted the favor of the mikado, was appointed minister of finance, special ambassador to negotiate a treaty with Corea (signed 1876, Feb. 27), and a commissioner to the centennial exhibition at Philadelphia. On his return he was appointed minister of foreign affairs, created a count, and placed in charge of the negotiations for the revision of the treaties with the western nations. In 1884, Dec., the pro- and anti-Japanese parties in the Korean capital precipitated a riot, in which the new Japanese legation was destroyed, and the Korean troops sided with the Chinese milit. contingent allowed in Seoul in driving the Japanese troops and officials beyond the city gate and to Chimulpo, the seaport. Two weeks afterward the mikado sent I. as special ambassador to Corea, and he negotiated a convention by which the king agreed to pay Japan \$500,000 indemnity; rebuild the legation, and allow a garrison of 1,500 Japanese troops in Seoul.

INOWRAZLAW, or INOWRACLAW, *ĩ-nōv-ráts'láv* (anc. JUNG BRESLAU, 'Young Breslau'); small town of Prussia, govt. of Posen, on an eminence, in a fruitful plain, 26 m. s.s.e. of Bromberg. It is ill-built; contains many religious edifices; and has considerable trade, especially in brewing, distilling, and manufacture of machinery. Pop. (1880) 11,558.

IN PACE, *ĩn pǎ'sě* [L. *in*, in; *pax*, peace, *pǎcě*, with peace]: in peace.

IN PARTIBUS, or IN PARTIBUS INFIDELIUM, *ĩn pá'r-tĩ-bũs ĩn'fi-dě'li-ũm* [L. *in*, into; *partibus*, in or with the parts; *ĩnfideliũm*, of the heathen]: in regions where the people are unfaithful or do not belong to the Rom. Cath. Church; among the heathen. In the Rom. Cath. Church a bishop *in partibus* is one who takes his title from an anc. bishopric of a country formerly Christian, but now wholly infidel, as from a district of Asia Minor or n. Africa, where there are now no Rom. Catholics, or scarcely any; such a bishop, nevertheless, may exercise his episcopal functions

IN PERPETUUM—INQUIRE.

as a missionary bishop in a Prot. country, or in a colony where there are Rom. Catholics. Since the Rom. Cath. hierarchy has been established in England and Scotland the bishops in these countries are no longer *bishops in partibus*. Titular bishops in the Church of Rome have been styled bishops *in partibus infidelium* since the 13th c. They are actual bishops, who have no diocese, and take their titles from places where there is now no bishop's see, but where there once was. This practice originated after the Greek schism, and became general in the time of the Crusades. The places conquered by the crusaders in the East were furnished with Rom. Cath. bishops; but when these conquests were again lost, the popes continued to appoint and consecrate the bishops, as a continual protest against the power which had prevailed over their alleged right, and to signify their hope of restitution. The same policy has been pursued with regard to Prot. countries. But in Britain, the assumption of territorial titles being illegal and dangerous, the Rom. Cath. bishops actually resident have usually borne titles derived from distant places. Thus, till 1878, the bishop in Edinburgh was styled bishop of Abila. The Rom. Cath. bishops in England were similarly designated from places abroad until 1850, when their assumption of titles from their actual sees gave prodigious offense to the Church of England, and led to the passing of the *Ecclesiastical Titles Bill*, which, however, remained a dead letter, and was repealed, 1871.

IN PERPETUUM, *in pēr-pēt'ū-ūm* [L.]: to perpetuity; perpetually; for ever.

IN PERSO'NAM: see IN REM.

IN PETTO, *in pèt'tō* [It. *in*, in; *petto*, the breast—from L. *pectus*, the breast]: in the heart; inwardly; in secret.

IN POSSE, *in pōs'sē* [L.—*lit.*, to be able]: in possible existence; that may be possible.

INQUEST, n. *in'kwēst* [L. *inquisītūs*, searched or inquired into—from *in*, into; *quæro*, I seek or look for: OF. *enqueste*, an inquiry]: judicial inquiry or examination; jury empanelled to inquire concerning a fire, or concerning a sudden death (see CORONER). INQUEST OF OFFICE, process to give the govt. possession of escheated lands, tenements, or chattels: the case must be tried before a jury. In the *United States*, it is applicable for forfeiture to the state of property in lack of heirs; and under the laws of some states, to vest in the state the title to real estate held by aliens.

INQUIETUDE, n. *in-kwī'ī-tūd* [F. *inquiétude*, uneasiness—from L. *inquiētūdīnem*, restlessness—from *in*, not; *quīētus*, quiet, undisturbed]: disturbed state; want of rest of mind or body.

INQUIRE, v. *in-kwī'r'* [L. *inquīrērē*, to seek after—from *in*, into; *quæro*, I seek: F. *enquérir*]: to seek for or after by questions; to seek, as for truth by discussion or investigation; to ask about. INQUIRING, imp.: ADJ. given to

INQUIRENDO—INQUIRY.

search or inquiry. INQUIRED', pp. -kwīrd'. INQUI'RER, n. -rēr, one who asks a question; a searcher after knowledge. INQUI'RINGLY, ad. -lī. INQUIRY, n. ĩn-kwī'rĭ, a question; search for truth, information, or knowledge; research; scrutiny.—SYN. of 'inquiry': interrogation; interrogatory; query; investigation; inquest; examination; search; inquisition.

INQUIRENDO, n. ĩn-quīr-ĕn'dō: in law, authority given in general to some person or persons, to inquire into something for the benefit of the government or the people.

INQUIRY, WRIT OF, in Law: writ obtained by a plaintiff in a case where the defendant has let proceedings go by default, and an interlocutory judgment has been given for damages generally, the precise amount of which is beyond the knowledge of the court. The writ requires that the sheriff of the county in which the venue is laid shall summon a jury of 12 men who shall inquire into the amount of damage the plaintiff has sustained, and assess a definite amount. The sheriff sitting as a judge certifies to the inquisition when made, and places it before the court, by whom alone final judgment thereupon is given. It is also used when a demurrer is determined for the plaintiff on an action wherein damages are recovered, and in some cases when a writ of injunction or mandamus has been issued.

INQUISITION.

INQUISITION, n. *in'kwī zīsh'ān* [F. *inquisition*—from L. *inquisitionem*, a seeking or searching for—from *in*, into; *quæsītus*, sought for: Sp. *inquisizione*]: court or tribunal for discovery, examination, and punishment of heretics and offenders against religion; formerly established in some Rom. Cath. countries, particularly at Rome; judicial inquiry. **INQUISITIONAL**, a. *-ān-āl*, or **INQUISITIONARY**, a. *-ēr-ī*, making or busy in inquiry. **INQUISITOR**, n. *-tēr* [L. *inquisitor*]: a member of the court of inquisition in some Rom. Cath. countries. **INQUISITO'RIAL**, a. *-tō'rī-āl*, with the prying eye and severity of an inquisitor. **INQUISITO'RIALLY**, ad. *-lī*.—*The Inquisition*, in the Rom. Cath. Church, is called the *Holy Office*. From the first establishment of Christianity as the religion of the Roman Empire, laws, more or less severe, existed as in most of the ancient religions, for repression and punishment of dissent from the national creed; and the emperors Theodosius and Justinian appointed officials called 'inquisitors,' whose special duty it was to discover and to prosecute before the civil tribunals offenses of this class. The ecclesiastical cognizance of heresy, and its punishment by spiritual censures, belonged to the bishop or the episcopal synod; but no special machinery for the purpose was devised, until the spread, in the 11th and 12th c., of certain sects reputed dangerous alike to the state and to the church—the Cathari, Waldenses, and Albigenses—excited the alarm of the civil as well as of the ecclesiastical authorities. To the public mind of that day, heresy was a crime against the state, no less than against the church. An extraordinary commission was sent by Pope Innocent III. into s. France, to aid the local authorities in checking the spread of the Albigensian heresy. The fourth Lateran Council (1215) earnestly impressed, both on bishops and on magistrates, the necessity of increased vigilance against heresy; and a council at Toulouse directed that in each parish the priest, and two or three laymen of good repute, should be appointed to examine and report to the bishop all such offenses discovered within the district.

So far, however, there was no *permanent* court distinct from those of the bishops; but under Innocent IV., 1248, a special tribunal for the purpose was instituted, the chief direction of which was vested in the then recently established Dominican Order. The inquisition thus constituted became a general, instead of, as previously, a local tribunal; and it was introduced in succession into Italy, Spain, Germany, and the southern provinces of France. So long, moreover as this constitution remained, it must be regarded as a strictly papal tribunal. Accordingly, over the French and German inquisition of the following century the popes, exercised full authority, receiving appeals against the rigor of local tribunals (Fleury, v. 266), and censuring, 'or even depriving', the inquisitor for undue severity (*ibid.* 303). In France the inquisition was discontinued under Philip the Handsome; and though an attempt was made under Henry II. to revive it against the Huguenots, the effort was unsuccessful. In Germany, on

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the appearance of the Beghards (see BEGUINES), in the beginning of the 14th c., the inquisition came into active operation, and inquisitors for Germany were named at intervals by various popes, as Urban V., Gregory XI., Boniface IX., Innocent VIII., down to the Reformation, when it fell into disuse. In England, it was never received, all the proceedings against heresy being reserved to the ordinary tribunals. In Poland, though established 1327, it had only a brief existence.

It is the history of the inquisition as it existed in Spain, Portugal, and their dependencies, that has almost absorbed entirely the real interest of this painful subject. As an ordinary tribunal similar to those of other countries, it had existed in Spain from an early period. Its functions, however, in those times were little more than nominal; but early in the reign of Ferdinand and Isabella, in consequence of the alarms created by the alleged discovery of a plot among the Jews and the Jewish converts—who had been required either to emigrate or to conform to Christianity—to overthrow the government, an application was made to Pope Sixtus IV., to permit its reorganization (1478); but in reviving the tribunal, the crown assumed to itself the right of appointing the inquisitors, and, in truth, of controlling the entire action of the tribunal. From this date forward Rom. Cath. writers regard the Spanish inquisition as a state tribunal, a character recognized by Ranke, Guizot, Lee, and even the great anti-papal authority, Llorente; and in dissociating the church generally, and the Roman see itself, from that state tribunal, Rom. Catholics refer to the bulls of the pope, Sixtus IV., protesting against it. Notwithstanding this protest, however, the Spanish crown maintained its assumption. Inquisitors were appointed, and 1483, the tribunal commenced its terrible career, under Thomas de Torquemada. The popes, feeling their protest unsuccessful, were compelled, from considerations of prudence, to tolerate what they were powerless to suppress; but several papal enactments are enumerated by Rom. Catholics, the object of which was to control the arbitrary action of the tribunal, and to mitigate the rigor and injustice of its proceedings. Unhappily, these measures were ineffective to control the fanatical activity of the local judges. The number of victims, as stated by Llorente, the popular historian of the inquisition, is positively appalling. He affirms that during the 16 years of Torquemada's tenure of office, nearly 9,000 were condemned to the flames. The second head of the inquisition, Diego Deza, in eight years, according to the same writer, put above 1,600 to a similar death; and so for the successive inquisitors-general. But Rom. Cath. loudly protested against the credibility of these fearful allegations. It is impossible not to see that Llorente was a violent partisan; and it is alleged that in his work on the Basque Provinces, he had already proved himself a venal and unscrupulous fabricator. Although, therefore, he has made it impossible to disprove his accuracy by appealing to the original papers, which he himself destroyed, yet his

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Rom. Cath. critics—as Hefele in his *Life of Cardinal Ximenes*—have produced from his own work many examples of contradictory and exaggerated statements; Prescott in his *Ferdinand and Isabella* (iii. 467–470), has pointed out many similar instances; Ranke does not hesitate (*Fürsten und Völker der Süd. Europas*, i. 242) to impeach his honesty; and Prescott pronounces his ‘computations greatly exaggerated,’ and his ‘estimates most improbable’ (iii. 468). Still, with all the deductions which it is possible to make, the working of the inquisition in Spain and its dependencies even in the new world, involves an amount of cruelty which it is impossible to contemplate without horror. When it was attempted to introduce it into Naples, Pope Paul III., 1546, exhorted the Neapolitans to resist its introduction, ‘because it was excessively severe, and refused to moderate its rigor by the example of the Roman tribunal (Llorente, ii. 147). Pius IV., 1563, addressed a similar exhortation on the same ground to the Milanese (*ibid.* ii. 237); and even the most bigoted Rom. Catholics unanimously confess and repudiate the barbarities which dishonored religion by assuming its semblance and its name.

The procedure of the inquisition was a triumph of diabolical ingenuity. The party suspected of heresy or denounced as guilty, was liable to be arrested and detained in prison, to be brought to trial only when it might seem fit to his judges. The proceedings were conducted secretly. He was not confronted with his accusers, nor were their names even then made known to him. The evidence of an accomplice was admissible, and the accused himself was liable to be put to the torture, in order to extort a confession of his guilt. The punishments to which, if found guilty, he was liable, were death by fire, as exemplified in the terrible Auto da Fé (q.v.), or on the scaffold, imprisonment in the galleys for life or for a limited period, forfeiture of property, civil infamy, and in minor cases retractation and public penance. This form of procedure is strangely at variance with modern ideas; but it is fair to recollect that some of the usages were the ordinary procedures in all the courts of the age, civil or ecclesiastical.

The rigor of the Spanish inquisition abated in the latter part of the 17th c. In the reign of Charles III., it was forbidden to punish capitally without the royal warrant; and in 1770, the royal authority was required as a condition even for an arrest. From 1808, under King Joseph Bonaparte, the inquisition was suppressed until the Restoration it was again suppressed on the establishment of the constitution 1820; but it was partially restored 1825; nor was it till 1834, that it was finally abolished in Spain, its property being applied to the liquidation of the national debt.

The inquisition was established in Portugal 1557, and its jurisdiction was extended to the Portuguese colonies in India. The rigor of its processes, however, was much mitigated in the 18th c., and under John VI. it fell altogether into disuse.

The inquisition in Rome and the Papal States never ceased, from the time of its establishment, to exercise a

INQUISITION—INSABBATATI.

severe and watchful control over heresy, or the suspicion of heresy, which offense was punished by imprisonment and civil disabilities; but of capital sentences for heresy, the history of the Roman inquisition presents few instances, and, according to Balmez (*On Civilization*, p. 156), that tribunal 'has never been known to order the execution of a capital sentence' for the crime of heresy. The tribunal still exists under the direction of a congregation; but its action is confined to the examination of books and the trial of ecclesiastical offenses, and questions of church law; and since the Italian occupation of Rome 1870 its supreme jurisdiction is limited to the Vatican. It has zealous defenders in Germany as well as Spain and Belgium, and some desire its re-establishment. See Llorente's *Istoria Critica de la Inquisicion*; Prescott's *Ferdinand and Isabella*; Hefele's *Cardinal Ximenes*; Balmez, *Catholicism and Protestantism*; Hoffman, *Geschichte der Inquisition* (1878); Molinier, *L'Inquisition* (1880).

INQUISITION, in Law: return or report by a sheriff or coroner as to the finding of a jury on matters inquired into.

INQUISITIVE, a. *in-kwīz'ī-tīv* [L. *inquisītus*, searched for—from *in*, into; *quāsītus*, sought for]: apt to ask questions; curious; prying; inquiring. **INQUISITIVELY**, ad. *-lī*. **INQUISITIVENESS**, n. curiosity to learn what is not known.

INRAIL, v. *in-rāl'* [*in*, into, and *rail*]: to inclose with rails.

IN RE, *in rē* [L.]: in the thing; in the matter of.

IN REM, in Law: proceedings instituted against a thing or piece of property to obtain decrees or judgments; usually in courts of admiralty and in actions under revenue laws; and such proceedings are confined to the property made the subject of the claim: thus courts of admiralty enforce the performance of a contract, when its performance is secured by a maritime lien or privilege, by seizing the object on which the lien is given. The difference between actions *in rem* and those *in personam* is illustrated by the case of a sailor suing for wages. He may proceed *in rem* against the ship or its freight, usually the quickest mode of recovery; or *in personam* against the master or owners. In courts of general jurisdiction the proceedings are most commonly *in personam*, and after judgment all the property of the person is liable to sale on the levy of an execution. A judgement *in rem* is generally binding on all parties in the cause as well as on all others interested with them in the thing.

INROAD, n. *in'rōd* [*in*, and *road*; Scot. *raid*; AS. *rād*, a riding]: encroachment; a sudden invasion.—**SYN.**: invasion; incursion; irruption; intrusion; entrance; attack.

INSABBATATI, n. *in-sāb-ba-tū'tī* [mod. L. marked on their sabots; *in*, on; F. *sabot*, a wooden shoe]: in *eccles. and chh. hist.*, name sometimes given to the Waldenses in the 12th c., because some of them put the sign of the cross on their wooden shoes; also called Sabbatati.

INSALIVATION—INSANITY.

INSALIVATION, n. *in'sāl-ĭ-vā'shŭn* [L. *in*, into; *salīva*, spittle]: the mingling of saliva with the food in the act of eating.

INSALUBRIOUS, a. *in'sā-lō'brī-ŭs* [*in*, not, and *salubrious*: It. and F. *insalubre*, unhealthful—from L. *insāl-ūbris*, unwholesome]: unfavorable to health; unwholesome. **INSALUBRITY**, n. *in'sā-lō brī-tĭ* [F. *insalubrité*]: unhealthiness.

INSALUTARY, n. *in-sāl'ū-tēr-ĭ* [*in*, not, and *salutary*]: not favorable to health.

INSANE, a. *in-sān'* [L. *insānŭs*, unsound in mind—from *in*, not; *sānus*, sound: It. *insano*]: deranged in mind; mad; crazy; wild or rashly conceived, as a project or action; in *OE.*, making mad. **THE INSANE**, those who are deranged in mind. **INSANE'LY**, ad. *-lĭ*. **INSANITY**, n. *in-sān'-ĭ-tĭ* [L. *insānĭtas*], or **INSANE'NESS**, n. *-nēs*, mental aberrations of various kinds and degrees, in which the patients are in certain respects incapable of self-control, resulting from diseased conditions of body, either organic or functional, as their proximate causes; unsoundness in mind; any degree of mental derangement.—**SYN.** of 'insanity': lunacy; madness; derangement; aberration; mania; delirium; dementia; frenzy; monomania; alienation; idiocy.

INSANITY: unhealthiness of mind. This consists, according to one opinion, in such disorganization or degeneration of the nervous structure as to render the exercise of reason impossible; according to another, it consists in disorder of the reason itself; and according to a third, in perversion or destruction of the soul, or the moral part of our nature. The prevailing view of physiologists is, that I. is a symptom or expression, manifested through the functions of the nervous system, of physical disease. The legal term, Lunacy, represents only those deviations from that standard of mental soundness which is universally recognized, though difficult of definition, in which deviations the person, the property, or the civil rights may be interfered with. These deviations are, briefly, where the incapacity, or violence, or irregularities of the individual are such as to threaten danger to himself or others, and to unfit him for his ordinary business and duties. Insanity is more comprehensive, and includes all states of the feelings and passions, as well as of the understanding, which are inconsistent with the original and ordinary character and habits of the individual, and with his relations to the family or community of which he is a member. It has been stated broadly, that if a man be deprived of the enjoyment of his religious rights by exclusion from membership of the church to which he belongs; of his civil rights in giving evidence in a court of justice or on oath; and of his personal rights in the management of his property and affairs, he may be regarded as insane; but more correct views of the human mind have led to the belief, that many degrees of feebleness of the faculties, many forms of eccentricity and extravagance, and many defects in the

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will and moral sentiments, which were formerly regarded as crime and wickedness, but which do not involve the deprivations above noted, may be classed under the same designation. Very recently, the interpretation of I. has been greatly widened, and now includes various degrees of moral perversion, morbid habits, and sudden impulses, such as dipsomania and homicidal mania. The great divisions of this class of diseases into mania, melancholia, and imbecility, remain popularly much the same as they were 2,000 years ago. While this fact may indicate that such a classification has a foundation in nature, it has, unfortunately, tendered to render the treatment, or rather the maltreatment, of the insane as stationary as the view of the diseases under which they labor. The following arrangement may serve to explain what I. is, as well as what it appears to be. (For most of the manifestations of disease referred to, see the respective titles.)

AFFECTIONS OF THE INTELLECTUAL POWERS.—*Idiocy*, non-development of one or more faculties. *Imbecility*, imperfect development of one or more faculties. *Fatuity*, or *Dementia*, deprivation by disease, or age, or otherwise, of powers which have been developed. *Mania*, with delusion, excitement, and irregular action of all the powers, especially of the intellectual powers; accompanied by errors connected with the special senses.

AFFECTIONS OF THE SENTIMENTS.—*Melancholia*, exaltation of grief, penitence, and anxiety. *Monomania of Fear*, exaltation of cautiousness. *Monomania of Pride*, exaltation of self-esteem. *Monomania of Superstition*, exaltation of the sense of awe, devotion, and the marvellous. *Monomania of Suspicion*, exaltation of jealousy, envy, want of confidence. *Monomania of Vanity*, exaltation of craving for applause, grandeur, of feeling of ambition.—For *Emotional Insanity*, see IMPULSIVE MADNESS.

AFFECTIONS OF PROPENSITIES.—*Dipsomania*, uncontrollable craving for stimulants. *Homicidal Mania*, impulsive desire to destroy life. *Kleptomania*, uncontrollable desire to acquire.

This catalogue is not intended to be exhaustive. The departures from health will correspond not merely with the primitive mental powers and instincts, but with every possible combination of these, and with such complications as may result from hereditary predispositions, innate peculiarities, education, and habit.—Dr. Combe *On Derangement*, Copland's *Dictionary*, art. 'Insanity.'

For the treatment of the insane, see LUNATIC ASYLUM; for the law on the subject, see LUNACY.

INSATIABLE, a. *in-sā'shī-ă-bl* [F. *insatiable*—from L. *insātiābilis*, not to be satisfied—from *in*, not; *sātiō*, I satisfy or glut]: incapable of being satisfied or appeased; very greedy. **INSA'TIABLY**, ad. *-blī*. **INSA'TIABIL'ITY**, n. *-bīl'ī-tī* [F. *insatiabilité*], or **INSA'TIABLENESS**, n. *-bl nēs*, a greediness that cannot be satisfied. **INSA'TIATE**, a. *-shī-ăt*, not to be satisfied. **INSA'TIATELY**, ad. *-lī*. **IN'SATI'ETY**, n. *-să-tī'-ī tī*, state of being unsatiated.

INSCRIBE—INSCRIPTIONS.

INSCRIBE, v. *in-skrīb'* [L. *inscribere*, to write upon—from *in*, on; *scribō*, I write; F. *inscrire*, to inscribe]: to write or engrave on anything; to assign or address to; to dedicate to; to draw one figure within another. **INSCRIBING**, imp. **INSCRIBED**', pp. *-skribd'*. **INSCRIBER**, n. one who. **INSCRIBABLE**, a. *-bā-bl*, that may be inscribed.

INSCRIPTION, n. *in-skríp'shūn* [F. *inscription*—from L. *inscriptiōnem*—from *in*, on; *scriptus*, written]: words written or sculptured on a monument, tomb, or building (see **INSCRIPTIONS**, below): words placed in the centre of a coin or medal on one face—those placed in the circle near the rim being called the *legend*: something written or printed on a book, as a mark of respect, or as an informal dedication. **INSCRIP'TIVE**, a. *-tiv*, bearing an inscription.

INSCRIP'TIONS: words or signs engraved or written on monuments or any objects not of the class of books, principally on hard materials, such as metals, stones, and other substances. They are a class of documents of the highest interest and importance to history and philology, and a consideration of them embraces the whole scope of history, language, and art. The oldest (excepting those of China) are probably some of the Egyptian inscriptions (see **EGYPT: HIEROGLYPHICS**) before B.C.; to which succeed those of the Accadian period in Assyria and Babylonia, reaching nearly as high an antiquity (see **CUNEIFORM: BEHISTUN**); which are succeeded by the Persian and Median, B.C. 525, and with which prevailed the Phœnician, probably about B.C. 700 (see **PHŒNICIA**); which were in their turn succeeded by the Greek, between B.C. 500 and 600, or even earlier; which were succeeded by the Etruscan and Roman, B.C. 400–300, and continued through the middle ages in Europe to the present day. See **PALÆOGRAPHY**. In the East, the oldest I. are those of China, which ascend to B.C. 2278; those of India not being older than B.C. 315, or the age of Sandracottus; while the antiquity of the hieroglyphical I. of Central America is not known. Of many ancient nations, the history and language are found in I. only, as in the case of Lycia and Etruria, and all official I. have a certain authority, from their contemporaneous nature, and the care with which they were executed,

Before the invention of paper or other light substances for record of events, public acts, devotions, and other documents were inscribed on *bronze*, as the early treaties and dedications of the Greeks, or even on lead, as certain small rolls of imprecation and others found in Greece; gold plates were inscribed and placed in foundations under the temples, as that of Canopus show; the *exequaturs* of consuls among the Greeks, and the discharges of the Roman soldiery, were inscribed on bronze tables; while charms, amulets, and other formulæ were occasionally inscribed on metals. The numerous I. known; amounting to probably half a million, have been classed under public or official acts, tables of magistrates, military titles, lists of magistrates, those relating to the gymnasia

INSCRUTABLE—INSECT.

or games, honors rendered to emperors or men, donations, rites, private and sepulchral, comprising epitaphs, some in elegiac and heroic verse, and numerous minor I. on gems, vases, and other objects of ancient art, on wax tablets or *pugillaria*, and the scrawls discovered on the walls of public and private edifices, as at Pompeii and elsewhere. For the study of the letters and their form, see ALPHABET; for the different languages and the mode of deciphering, see their respective titles. For those found on coins, see NUMISMATICS. The most remarkable I. are the trilingual inscription of Rosetta, that of Shalmanazer on the obelisk of Nimrud, and the cylinder of Sennacherib; the trilingual inscription of Darius I. on the rock at Behistun; the Greek inscription of the soldiers of Psammetichus at Ib-samboul, and of the bronze helmet dedicated by Hiero I. to the Olympian Jupiter; the inscription on the coffin of the Cyprian king Asmumazer; the Etruscan inscription called the Eugubine Tables; that of Mummius, conqueror of Corinth, at Rome, and the will of Augustus at Ancyra; the inscription of the Ethiopian monarch Silco; the old monument of Yu, and the inscription of Se-gan-fu, recording the arrival of Christianity in China (A. D. 631); the I. of Chandra-gupta and Asoka in India. The study of I., or epigraphy, has formed a special branch of scholarship. Forged I. are a special difficulty. Much progress has been made recently in collecting and deciphering I., Egyptian, Indian, Semitic, Accadian, as well as Greek and Latin; the reading of Cypriote and Hittite being among the more recent triumphs of epigraphy. Of scholars who have distinguished themselves in this branch, are Muratori, Böckh, Orelli, Gesenius, Mommsen, Lepsius, Letronne, Lebas, Halévy, Lenormant, Sayce, Renan, Schröder. Collections of I. are numerous; among the more notable being the *Corpus Inscr. Græcarum* by Böckh, Franz, and Kirchhoff (1828-56), and the *Corpus Inscr. Latinarum* by Mommsen, Henzen, Hübner, Garucci, Zangemeister, and others (14 vols. 1853-82). See, besides the titles above, ETRURIA, PHÆNICIA: and others on special languages; also WRITING.

INSCRUTABLE, a. *in-skrô'tă-bl* [F. *inscrutable*, inscrutable—from L. *inscrutabilis*—from *in*, not; *scrûtor*, I search]: that cannot be searched into and understood by man; impenetrable. **INSCRUTABLY**, ad. *-blĭ*. **INSCRUTABLENESS**, n. *-bl-nĕs*, or **INSCRUTABILITY**, n. *-bl'ĭ-tĭ*, quality of being inscrutable.

INSCULP, v. *in-skŭlp'* [L. *in*, in or on; *sculptus*, carved or cut]: in *OE.*, to engrave; to cut. **INSCULP'ING**, imp. **INSCULPED**, or **INSCULPT**, pp. *in-skŭlpt'*. **INSCULPTURE**, *in-skŭlp'tŭr*, or *-chŭr*, in *OE.*, anything engraved.

INSEAM, v. *in-sĕm'* [*in*, into, and *seam*]: to impress or mark with a seam or cicatrix.

INSECT, n. *in'sĕkt* [F. *insecte*—from L. *insec'tus*, cut into; *insec'ta*, things cut into, insects—from *in*, into; *sĕcō*, I cut: Sp. *insecto*]: general name for a small creeping or flying animal, such as the fly, bee, bug, etc., so named because the bodies of many of them are cut or almost divided

INSECTICIDES AND FUNGICIDES.

into parts. INSECTED, a. *in-sĕk'tĕd*, divided into sections, like an insect. INSEC'TICIDE, n. *-tĭ'sĭd* [L. *cædĕrĕ*, to cut or kill]: that which kills or destroys insects. INSECTILE, a. *in-sĕk'tĭl*, having the nature of insects. INSEC'TION, n. *-shŭn*, a cutting into. INSECTA, n. plu. *in-sĕk'tă*, the class of articulate animals commonly known as insects (q. v.).

INSECTICIDES, *in-sĕk'tĭ-sĭdz*, AND FUNGICIDES, *fŭn'jĭ-sĭdz*: articles or compounds, the former used to repel or destroy insects; and the latter to prevent or check the progress of fungous diseases. Destructive insecticides are usually, though not universally, employed in the form of a spray when directed against leaf-eating insects, and as a powder when combatting those that suck their food. In the former case the food supply of the insects is poisoned; in the latter the pests are destroyed by suffocation. Vapor and gas are also used to destroy certain classes of insects. Repellant substances are used in the form of powder or as washes. Various mechanical means are also employed to destroy or prevent the attacks of injurious insects. Fungicides are usually employed in the form of a spray. Under some conditions an insecticide is combined with a fungicide, and thus, by a single application, the plant or tree is protected against two classes of enemies. For the application of materials in the form of a spray there are numerous machines, called sprayers or spraying pumps. Some are carried on the back, others are mounted on hand-barrows, and many are drawn by horses. In any case the liquid is discharged by means of a force pump. For low-growing plants in gardens and small fields a common watering pot with a rose nozzle is often used; and the application of the poisonous solution is sometimes made with a whisk broom. For the application of dry materials there are various forms of 'powder guns,' bellows, and dusters.

The number of insecticides and fungicides which have been tested is very large. Some have been greatly modified in their composition, and others have been discarded. Those which are described are standard preparations. Most of them have been endorsed and the formulas published by one or more of the State Agricultural Experiment Stations or by the Department of Agriculture at Washington. For specific remedies for many of the more important insect pests see INSECTS.—*Injurious Insects*.

INSECTICIDES.—*Benzine*.—Used as a spray, principally for insects found in buildings. Must not be used near a flame, and no light should be carried into a room in which it has been used until the odor disappears.

Bisulphide of Carbon.—To destroy insects in grain, place in a shallow open vessel on top of the grain, and close the bin tightly. One oz. is sufficient for 100 lbs. of grain. For root lice, pour a teaspoonful into a hole near the plant and cover at once. This substance is inflammable and explosive. Its fumes must not be breathed, and the same precautions in regard to fire as are noted for benzine should be observed.

Carbolic Acid Emulsion.—This is used as a spray to de-

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stroy eggs and maggots. It is made by dissolving 1 lb. of hard soap or 1 qt. of soft soap in 1 gal. of boiling water, adding 1 pt. of crude carbolic acid and agitating till an emulsion is formed. Before using, one part of this emulsion should be diluted with 25 or 30 equal parts of water.

Hellebore.—This substance is very effective in destroying the currant worm and similar insects. It can be dusted upon the leaves as a dry powder, diluted with 4 times its bulk of flower, or used as a liquid. One oz. of the fresh powder to 3 gals. of water makes a mixture of sufficient strength.

Kerosene Emulsion.—This is made by adding 1 gal. of sour milk to 2 gals. of kerosene and agitating until a creamy mass results. If sweet milk is used a little vinegar must be added. The work can best be done by means of a force pump with a small nozzle, through which the liquid is forced back into the same vessel from which it is drawn. Before using, it is to be diluted with 10 to 20 parts of water to one of the emulsion. Three or four parts of boiling water should be used when commencing the dilution. Cold water can then be added to complete the reduction.

London Purple.—An arsenical poison, especially valuable in combatting leaf-eating beetles, caterpillars, etc. It is used as a powder, diluted with plaster, air-slaked lime, or flour, in proportions varying from 20 to 80 parts of the dilutant to one of the poison, and dusted upon the plants. Thorough mixing is essential. If used as a spray, lime is needed to convert the soluble arsenic into an insoluble form. To 1 lb. of London purple $\frac{3}{4}$ lb. of lime should be added and well mixed in a gallon of hot water. After standing 2 hours this mixture can be used at the rate of 5 oz. to a barrel of water except for trees or plants with tender leaves, as the peach, for which 4 oz. to 50 gals. of water is sufficient.

Paris Green.—This is an arsenical poison and one of the most efficient insecticides in use. It is employed for the same classes of insects as London purple, and in the powder form is diluted and used in the same manner. As a spray it can be used at the rate of 1 lb. to 150 to 250 gals. of water—the weaker preparation for stone fruits and tender-leaved plants. It is well to add lime in a little larger proportions than directed for London purple.

Pyrethrum.—This material is effective with a large number of insects. It should be fresh, or kept in air-tight packages. In the form of powder it can be used clear, or diluted with 3 to 6 times its bulk of air-slaked lime or flour. As a spray it should be used at the rate of 1 oz. to 3 gals. of water. It should stand for one day before it is used.

Tobacco.—As an insecticide this is used as a powder or as a decoction. It is of great value in greenhouses, gardens, and to destroy lice on domestic animals. The powder is sprinkled upon and around the plants to be protected. The decoction is made by boiling stems or refuse tobacco in water. One pound of tobacco is sufficient for two gallons of water. Enough cold water should be added

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to make up for evaporation during the process of boiling. The decoction is used as a spray.

FUNGICIDES.—*Ammoniacal Copper Carbonate Solution.*—This is made by mixing 5 oz. copper carbonate with sufficient water to form a paste, which is to be completely dissolved in ammonia (26 per cent.). From 3 to 4 pts. will be required. This is to be diluted with 50 gals. of water. The mixing should be done in wooden vessels. This fungicide has proved valuable in preventing apple scab and various forms of mildew.

Bordeaux Mixture.—This is made by dissolving 6 lbs. copper sulphate (blue vitriol) in 16 gals. of water, slaking 4 lbs. of lime in 6 gals. of water, and straining the whitewash thus made into the copper solution, stirring thoroughly. It is to be made in wooden vessels and applied at once. In many instances the use of 4 lbs. of copper sulphate has given as good results as 6 lbs. For a weak solution the quantity of water is sometimes increased to 50 or 60 gals. This is one of the best fungicides known, and is very efficient in the treatment of various rots, blights, mildews, and rusts.

Copper Sulphate Solution.—This is made by simply dissolving copper sulphate in water. The strength may be varied with the character of the plants or trees to which it is applied. One lb. of the copper sulphate to 25 gals. of water can be used before the buds open. After the leaves appear 1 lb. to 250 gals. of water is sufficient.

Corrosive Sublimate Solution.—Used for potato scab. It is made by dissolving, in 2 gals. of hot water, $2\frac{1}{4}$ oz. of corrosive sublimate (bichloride of mercury). After standing for 12 hours add 13 gals. of water. The seed potatoes are to be soaked in this solution for $1\frac{1}{2}$ hours. The solution can be used repeatedly. It must not be used in metal vessels, and, as it is extremely poisonous, it must be kept where children and animals cannot get to it.

COMBINED INSECTICIDES AND FUNGICIDES.—*Bordeaux Mixture and Arsenites.*—Made by adding 4 oz. of Paris green or London purple to 50 gals. of Bordeaux mixture. This is used upon trees and plants for the double purpose of destroying insects and preventing or checking the progress of fungous diseases.

Copper-arsenic Solution.—Six oz. copper carbonate and 4 oz. of Paris green are mixed and dissolved in about 2 qts. of ammonia and added to 50 gallons of lime water, made by using as much lime as the water will dissolve.

In using insecticides or fungicides prompt action is of the utmost importance. With most of the liquid compounds used for these purposes it is necessary to keep the materials well stirred. Poisonous compounds should not be used upon fruits for about 4 weeks before they are ripe. Copper preparations should never be placed in iron or tin vessels; and Paris green or London purple should never be used with the sulphate of copper solution or with any compounds containing ammonia. A rain falling soon after the use of an insecticide or fungicide will make it necessary to renew the application. The spray should be fine and should reach every branch and leaf. Six qts. is an ample

INSECTIVORA—INSECTIVOROUS BIRDS.

quantity for a tree of average size. For some diseases it is necessary to spray every two weeks until the plant is nearly mature or the fruit is well developed. The solid matter left upon fruit by the Bordeaux mixture can be removed by washing with vinegar and water—1 qt. of the former to 5 gals. of the latter.

INSECTIVORA, n. plu. *in'sĕk-tĭv'ō-ră* [L. *insecta*, insects; *voro*, I devour]: order of the Mammalia (q.v.), that feed principally on insects: see Dobson's *Monograph of the Insectivora*, 1882-3. None of the I. are of large size; most of them are small timid creatures, generally nocturnal in their habits, and useful in the economy of nature chiefly in preventing the undue increase of worm and insect tribes. Although many of them are not exclusively insectivorous, all of them have the summits of the molar teeth beset with small conical tubercles, as for the purpose of breaking up the hard coverings of insect prey. Their dentition is otherwise very different in the different families. Their legs are short. They all place the whole sole of the foot on the ground. The snout is generally elongated. The families of *Talpidae* (Moles, etc.), *Soricidae* (Shrews, etc.), *Erinaceadæ* (Hedgehogs, etc.), and *Tupaidæ* (Banxtings) are referred to insectivora. The I., though in some respects very different from the *Cheiroptera*, show affinity to them in others. INSECTIV'OROUS, a. -rŭs, feeding on insects. INSECTIVOROUS PLANTS: see DIONÆA.

INSECTIV'OROUS BIRDS: birds which feed on insects. In this class many different varieties are represented. Some of these make a much larger proportion of their diet of insects than others. Some also have special liking for those classes of insects which are either harmless or positively beneficial, while others choose the kinds injurious to fruits and to cultivated plants. Insects are among the most destructive foes with which the farmers, gardeners, and fruit growers of this country have to contend. The annual loss to these classes caused by the depredations of insects is estimated by careful observers to be from \$300,000,000 to \$400,000,000, and appears to be rapidly increasing. On account of their nature and habits, as well as their immense numbers, insects are extremely difficult to control. Almost without exception our fruits and cultivated plants, our ornamental trees and shrubs, and even our flowers, are attacked by insects. I. B. are among the most destructive of the natural enemies of these pests. Each season insects in numbers beyond all human power of computation are destroyed by 'the voluntary police of our fields and gardens.' In many sections insects would utterly ruin the fruit and destroy the grain crops if they were not constantly kept in check by birds. Insects multiply with such enormous rapidity that if their increase were unchecked, they would in a few years become so numerous as to destroy plant life throughout the world.

It is objected to birds that they destroy beneficial insects as well as those which are injurious, and that they do much damage to both fruit and grain crops. While this

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is true to some extent, experience has proved that the evils caused by birds are not to be compared with those which they prevent. Wherever birds have been destroyed or driven away, insect depredations have quickly increased to an alarming extent. More than 200 kinds of insects find their homes in our orchards. When birds are expelled, great quantities of the fruit are destroyed and a large proportion of that which ripens is made defective by the attacks of insects, and in many cases the trees are defoliated, and thus seriously injured.

Many of our native and most popular song birds are insectivorous, and some varieties of birds which have neither sweetness of voice nor beauty of plumage are very useful in destroying insect enemies. The robin is one of the most efficient in destroying pernicious insects, though on account of its partiality to the various small fruits, it is not admired by producers of these crops. But in the spring and autumn robins destroy immense numbers of injurious insects. They feed but little on insects useful to the farmer. The bluebird eats enormous quantities of insects, and discriminates but slightly between the different classes. It does but little injury to fruit. The brown thrush and the cat-bird feed on both insects and fruit, but are far less destructive to the latter than are the robins. The chickadee is particularly useful in orchards, destroying both insects and their eggs. The cedar-bird, though feeding on fruit to some extent, is the special foe of the canker worm, and destroys other orchard pests. The woodpecker, while doing some harm, destroys numberless grubs and worms which infest fruit and ornamental trees. The cuckoo destroys many caterpillars. The kingbird feeds largely on insects, but is unpopular where bees are kept as, to a small extent, it includes them in its diet. The lark, yellow-bird, and quail eat insects, also grain and the seeds of various weeds. The rose-breasted grosbeak is very destructive to the Colorado potato-beetle, and is said to have largely increased in numbers in the central portion of the United States since the appearance of that pest. Some varieties of the sparrow are useful as insect destroyers, but the English sparrow does far more harm than good. Hawks and owls drive away some of the song birds, but destroy many insects which injure trees and crops. The smaller varieties of these birds are properly classed among the kinds useful to the farmer. The crow, though often shot for depredations in corn-fields, destroys numberless grubs and worms, and does much more good than harm.

In some states most of the birds named above are protected by statute, but during the small-fruit season the law against killing them is often violated. Their destruction is a short-sighted policy. Instead of killing them, the farmer should regard these, and similar birds, as among his most efficient allies. They should be protected from injury, furnished with food at times when the natural supply proves inadequate, and encouraged to make their homes in his fields and orchards.

INSECTS.

INSECTS (*Insecta*): one of the classes of *Arthropoda* (see **ARTICULATA**), of the division having articulated members. All the *Articulata* having articulated members were included by Linnæus in the class of I.; but the *Crustacea* and *Arachnida* were soon separated from it, and afterward the *Myriapoda*: see these titles. This restricted application of the term I. corresponds more nearly with its popular use, and so well accords with its derivation, that it may be regarded as one of the most appropriate names in natural history. It is from a Latin word, signifying *cut into*; a derivation exactly answering to that of the Greek *entoma*, from which the science having insects for its subject receives the name of Entomology. Insects, a natural and extremely well defined class of organized beings, are remarkable, in their mature or *perfect* state, for the division of their bodies into three very distinct portions—the *head*, *thorax*, and *abdomen*; the divisions being often so deep, that the slenderness to which the body is there reduced occasions surprise.

The body of an insect, as of all the other *Articulata*, is composed of a certain number of rings. One of these forms the head; or, if the head ought to be regarded as really composed of several rings, modified and condensed together, as the skull of vertebrate animals is formed of modified vertebræ, yet no distinction of rings appears. The eyes, the antennæ, and the organs of the mouth, are the most conspicuous organs connected with the head.

The thorax is formed of three rings, closely combined, but easily distinguishable. The first is the *prothorax*; the second, the *mesothorax*; the third, the *metathorax* [Gr. *pro*, before; *mesos*, middle; and *meta*, after]. Of these rings, one or another is often remarkably developed. The legs and wings are attached to the thorax. Insects have six legs, and generally four or two wings, never any other number; but some are wingless, and this is the case not only in all the insects of certain groups, but also in particular species of groups ordinarily winged, and is sometimes even a distinction of sex, as in the glowworm. The first pair of legs are attached to the prothorax; the second, to the mesothorax; the third, to the metathorax. The first pair of wings are attached to the mesothorax; the second to the metathorax. In dipterous (two-winged) insects, the place of the second pair of wings is occupied by two small organs—little threads, terminated by a knob—called balancers (*halteres*), the use of which is not known.

The abdomen consists of nine rings, or of fewer; as some are often obliterated, or modified, to form various appendages. It contains the principal viscera. In it, the sexual organs are situated. The rings of the abdomen are much more separable and movable than those of the thorax. The terminal rings of the females of some groups form an oviduct or ovipositor, which is sometimes capable of being employed as a borer, to make a place for the eggs in the animal or vegetable organism destined to receive them, and which in wasps and bees is replaced by a sting.

The nervous system of I., in all their stages of existence, exhibits the general characters noticed as belonging to the

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Articulata (q.v.). There is a *brain*, or ganglion of the head, from which arise the nerves of the eyes, antennæ, and mouth.

The rings of which the body of an insect is composed appear most distinctly in the external covering. This is in most parts hard, but more or less flexible, of a horn-like substance, chiefly composed of *Chitine* (q.v.). The external covering of insects is the principal framework of their bodies, and to it the muscles are attached. The external covering of each ring is more or less distinctly divided into two parts—a dorsal and a ventral—the connection at the sides being effected by a softer and more flexible membrane, a still softer membrane connecting the rings of the abdomen, so as to allow considerable freedom of motion; while between the rings are minute pores called *stigmata* or *spiracles*, by which air is admitted to the *tracheæ* or air-tubes (q.v.), the organs of respiration.

Insects respire neither by means of lungs or by means of gills, and the blood is not brought to a particular part of the body for aëration, as by circulation in vertebrate and many invertebrate animals, but the air which enters by the breathing-pores is conveyed by tubes to all parts of the body, and even through the delicate structure of the wings, so that the whole frame is rendered more light by the very means employed to maintain and increase muscular energy. Respiration is extremely active I.; they consume a great quantity of oxygen in proportion to their size, and they display in general an extraordinary degree of activity and muscular energy. The flight of very many kinds is far more rapid in proportion to their size than that of birds; others display a similar superiority of powers in running, swimming, or digging and burrowing; while the leaping of many, as fleas and grasshoppers, and the springing of others, as cheese-hoppers, prodigiously exceeds anything of which any vertebrate animal is capable. The respiration of aquatic I. takes place in the same manner as that of other I., and they come to the surface of the water for fresh supplies of air.

The blood of I. is thin and colorless. It is not everywhere inclosed in vessels, but is freely diffused in interstices between the muscles and other organs, and in the visceral cavity. It contains globules or corpuscles of determinate shape. How far the *dorsal vessel* (see ARTICULATA) should be regarded as a *heart* is not fully determined; but by its contractions and dilatations, a constant motion of the blood is maintained.

The members of I. have generally a structure analogous to that of the trunk, in being composed of articulations, the hard and solid part of which is the external covering. This appears very perfectly in the legs, the antennæ, and the palpi, but not in the wings.

The legs of I. consist of two principal parts, the thigh (*femur*) and shank (*tibia*), with two smaller articulations, the *coxa* and *trochanter*, interposed between the body and the thigh; and at the extremity of the shank, a set of three, four, or five small articulations, called the *tarsus*. The

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last segment of the tarsus in terrestrial I. is generally terminated by a pair of hooks or little claws; and many dipterous I., as the House-fly (q.v.), have discs and suckers for taking hold of smooth surfaces.

The wings of I. are often very large in proportion to the size of the body, and the rings of the thorax are soldered together, and supported by supplementary pieces, to give firm support to them, and to the powerful muscles necessary for their action. The hard covering of the body of an insect consists, like the skin of vertebrate animals, of three layers, and the membranes of the wings are filmy expansions of the outermost of these, the epidermis. The ribs or nervures in the wings of I. are tubes, of which one of the uses is the conveying of air even to the extremities of the wings. The forms of the wings are very various; some of the more important diversities being characteristic of different orders. The bodies of I. are often very much cov-



Various Forms of Insects' Feet, showing the adhesive Discs or Suckers (highly magnified).

(Copied from Rymer Jones's *Animal Kingdom*).

A, one of the middle pair of legs of Water-beetle; B, foot of *Bibio febrilis*; C, foot of House-fly; D, leg and foot of *Cymbex lutea*; E, tarsus of Abyssinian Grasshopper, showing hooks or leaping appendages; F, one of the anterior legs of Water-beetle.

ered with hairs, which are frequently very long and thick in proportion to the size of the animal, and on the wings of butterflies and other *Lepidoptera* are flattened and expanded so as to form scales (see BUTTERFLY), often richly colored; also, by reason of very fine parallel striæ, with which they are marked, displaying an admirable iridescence or reflection of evanescent prismatic colors in changing light. The first pair of wings in coleopterous I. or beetles is represented by a pair of hard chitinous *elytra* (Gr. coverings), or wing-covers. *Orthopterous* I. have softer leathery or parchment-like *elytra*,

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Insects feed on very different kinds of food; some prey on other I., some devour animal and some vegetable substances, some suck the juices of animals some the juices of plants or the honey of their flowers. The structure of the mouth varies accordingly, and the digestive organs also vary. The mouth is adapted either for gnawing, cutting, and tearing, or merely for sucking, or it is adapted partially for both of these purposes. The parts of a mandibulate mouth (see COLEOPTERA) are an upper lip (*labrum*) and an under lip (*labium*), moving vertically; and an upper pair of jaws or mandibles (*mandibulæ*) and a lower pair of jaws (*maxilla*), moving horizontally. The upper and under lip meet when the mouth is shut. Both are as hard as the jaws. The lower lip is sometimes regarded as consisting of two parts, called the chin (*mentum*), and the tongue (*lingua*), which is more membranous and fleshy, and reposes on the inside of the chin. The upper jaws or mandibles are usually powerful, and often strongly toothed and hooked, sometimes furnished with cutting edges like sharp scissors, and sometimes adapted for bruising and grinding. They are also the instruments which bees and other I. use for their wonderful operations of cutting, tearing, building, plastering, etc. The lower jaws or maxillæ are generally less powerful. In some I., in which the mandibles are enlarged into great organs of prehension, the maxillæ alone serve for the ordinary use of jaws in eating. To the maxillæ and the lower lip are attached organs called *palpi* or feelers, consisting of a number of minute articulations, supposed to be delicate organs of touch connected with the purposes of the mouth, and distinguished as *maxillary palpi* and *labia palpi*.

The mouths of mandibulate I. are sometimes called *perfect*, and those which exhibit a different character *imperfect*. The terms, however, are improper—each kind is perfect, according to the purposes for which it is used. Yet a correspondence of structure may be traced, so that the parts of the mandibulate mouth may be recognized under various and very remarkable modifications in the mouths of I. which live by suction. Thus the filaments which form the proboscis of butterflies are the maxillæ excessively lengthened, and the cutting parts of the mouth of the flea are the mandibles and maxillæ. The proboscis of flies represents the lower lip.

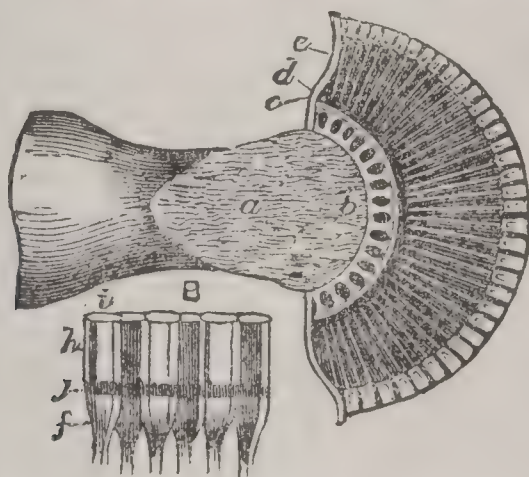
The alimentary canal of I. is usually more or less convoluted. Between the mouth and the proper digestive stomach, it sometimes exhibits a *crop* (honey-bag of bees) in I. which live by suction, and this is either a dilatation of the lower part of the gullet or a lateral vesicle; sometimes a *gizzard*, with muscular walls, often armed with horny pieces, for trituration of food. The stomach is of a very elongated form. The liver is represented by long slender bile-tubes, four or more in number, which wind around the intestine, and pour their secretion into it, where it originates from the stomach. The salivary glands are generally similar tubes.

The eyes of I. are of two kinds—*simple* or *stematic*,

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and *compound* or *composite*: see EYE. Some I. have only simple eyes (*ocelli*), some have only compound eyes; but the greater number have two large compound eyes on the sides of the head, and three small simple eyes between them. Compound eyes occur in I. only in their mature or perfect state; the eyes of larvæ are simple.

The Antennæ (q.v.) are generally regarded as organs of touch. They are attached to the head, in front of the eyes, and are always present, and always two in number. They exhibit a vast variety of forms, some of which are figured in the following cut. I. make much use of their antennæ to investigate surrounding objects by contact, though, if this is their sole use, it is not very easy to assign any probable reason for some of their forms; but there is not much plausibility in the conjectures which assign to them a part in the exercise of the senses of hearing and smell, though



Section of the Eye of a Cockchafer (highly magnified):

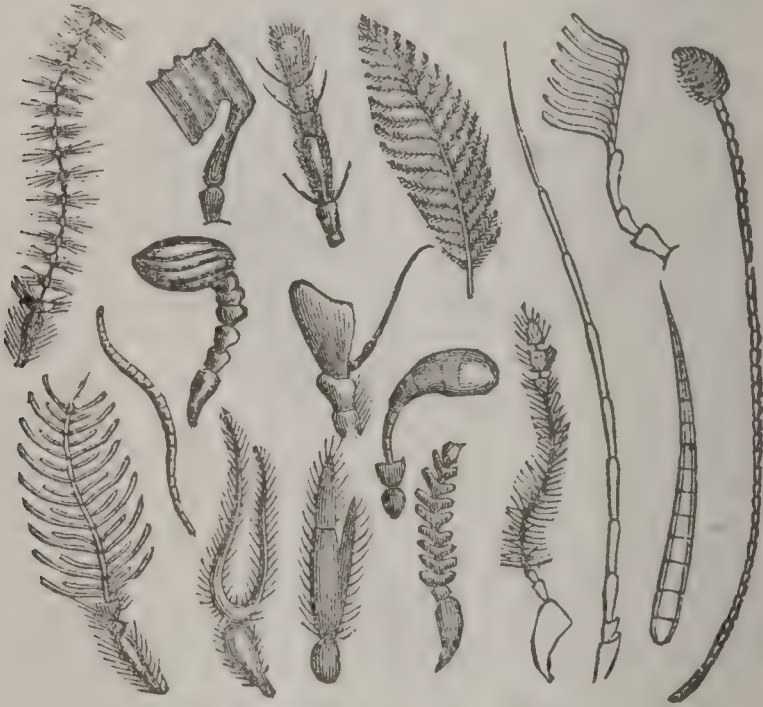
A, section: *a*, optic ganglion, into which the optic nerve swells; *b*, nerves arising from its surface, and proceeding to the general retina; *c*, general retina; *d*, layer of pigment, in front of the general retina; *e*, optic nerves of the individual eyes which form the compound eye. **B**, a group of these, much magnified; *f*, bulb of optic nerve; *g*, layer of pigment; *h*, vitreous humor; *i*, cornea.

these senses and taste are evidently possessed by I., or at least by many I., in great perfection; but their particular seat and organs are not ascertained. The sense of smell appears to be of great importance to I. in guiding them to their food. The sexes are distinct in all I., and very remarkable differences are often exhibited by the males and females of the same species, in size, color, and the form and structure of parts that have no immediate connection with the reproductive system. What are called *neuters* in some tribes are imperfectly developed females. The connection of the sexes takes place only once in the lives of I., and a remarkable provision is made in the female for the consequent fertilization of eggs, that in some, as bees, continue for a long time afterward to be successively developed.

Insects are generally oviparous; a few are ovoviviparous. The *Aphides* afford an instance of what has been called the Alternation of Generations: see GENERATIONS, ALTERNATION OF. The greater number of I. take no care

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of their eggs after depositing them, and many themselves pass out of existence before the eggs are hatched; the chief part of the lives of I. being generally spent in their immature states, and their brief existence in a perfect state serving mainly for the propagation of their species. Thus many insect tribes disappear entirely on the approach of winter, their eggs awaiting the warmth of spring or summer to be hatched. The case is very different, however, with bees, ants, earwigs, and some others, which carefully tend and rear their young.—The number of eggs laid by I. is very various, but often very great. The flea, indeed, lays only about 12 and many dipterous and coleopterous insects about 50: but the silkworm produces 500 to 2,000; a single queen bee is supposed to lay 40,000 or 50,000 in a season; and the female termite or white ant, laying about 60 eggs in a minute, and for a period of considerable



Various Forms of Antennæ.
(Copied from Roget's *Animal Physiology*.)

though unknown duration, exceeds as to the number of her eggs any other known animal.

The eggs of I. are generally white, yellow, or green; they are of very various shapes—round, cylindrical, conical, lenticular, etc.; they are sometimes smooth, sometimes beautifully sculptured.

The stage of development at which I. come forth from the egg is very different in different tribes: in some, they appear as footless worms; in others, they have rudimentary feet, still with very little power of locomotion; in others, besides little claws representing the six feet of the perfect insect, there are on the abdominal segments of the worm-like body fleshy tubercles serving as feet; in others still, the legs are well developed, and the insect, on issuing from the egg, differs little from the perfect insect, except, in the lack of wings; while, finally, in a comparatively

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small number (lice, etc.), there is no obvious difference except in size. Similar differences of the degree of development appear in the mouth, eyes, and other organs. Hence the subsequent changes by which the mature state is reached are very different in degree; and I. being primarily divided into those which undergo and those which do not undergo metamorphosis, some of the former are commonly spoken of as undergoing *complete*, and others *incomplete* metamorphosis. In the first state of insect life, the insect is called a *Larva* (q.v.). Grubs, caterpillars, and maggots are the larvæ of different orders of insects. From this state it passes into that of a *Pupa* (q.v.), or nymph—a *chrysalis* or *aurelia* is the *pupa* of a lepidopterous insect—and finally it becomes an *imago*, or perfect insect.

The metamorphoses or transformations of I. have always been regarded with great admiration. A worm, inhabiting a muddy pool, becomes a winged creature that sports in the air. A crawling caterpillar, that ravenously devours some kind of herbage with its horny jaws, eating vastly more in proportion to its size than an ox, is converted into a splendid butterfly, flitting from flower to flower, and feeding only on nectareous juices. The intermediate or pupa state only adds to the wonder. The caterpillar, after several *moultings*, or changes of skin, and when it has attained its utmost size, ceases from eating, perhaps fixes itself under a leaf, becomes incased in a horny covering, as in a second egg, and from this it finally breaks forth a moth or a butterfly. Many larvæ, also, when about to change into the pupa state, spin cocoons (q.v.), in which they envelop themselves, by means of *spinnerets* on the under lip, through which a viscid secretion passes in fine threads which harden into silk. But while the pupæ of many I. are motionless, or nearly so, and eat no food whatever, the pupæ of other I., e.g. dragon-flies, are active and voracious. The intermediate or pupa state often differs little from the larva state, except in the possession of wings, or from the perfect state, except in the wings being merely rudimentary and still unfit for flight.

An opinion formerly prevailed, that the successive envelopes of the larva all were contained from the beginning within the first, within them the covering of the pupa, and within it the perfect insect. This extraordinary fancy has given place to the belief, established on sufficient observation, that the envelopes which the growing larva successively casts off, are merely a hard, thick, extravascular and unextensible epidermis; that the jaws, claws, etc., of the larva, with which it parts when it becomes a pupa, in the case of I. undergoing complete metamorphosis, are connected with the epidermis; and that the covering of the pupa is a new secretion. Discoveries, however, do not render less but only more marvellous, the changes which take place. Of these, some of the most important are in the organs of the mouth, the digestive organs and the nervous system.

It is not certain that any insect has a voice or cry, though the origin of the sounds produced by some of them, as the

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plaintive, squeaking note of the death's-head moth, is not known. The sounds of which we do know the origin are not produced by the mouth or throat: see GRASSHOPPER, DEATH-WATCH: CICADA.—The *humming* or *buzzing* of I. during flight has been commonly ascribed to the extremely rapid vibrations of their wings. Burmeister, however, supposes it to be produced by vibratory laminae in the respiratory spiracles of the thorax, acted upon by the forcible emission of air during the violent muscular action necessary for flight.

Insects all are animals of small size, and many are minute. The largest species are tropical, and I. of all sizes abound in warm far more than in cold climates. The I. of the polar regions are comparatively few, and are seen only during summer; those of them whose whole existence is not comprised within a single year spending the winter, as very many I. of temperate climates also do, in a state of torpidity. All I. are very fond of heat, and many which do not become completely torpid in cold weather, become partially so. It is only in warm weather that I. display their greatest activity. As to their geographical distribution, I. are found in all countries, to the utmost alpine and polar limits of vegetable life. Many kinds are peculiar to particular climates and countries. The I. of the Malayan Archipelago and of Australia, like their other natural productions, are generally very different from those of other parts of the world. The I. of elevated mountainous regions within the tropics generally resemble those of the temperate and frigid zones, but are seldom the same. The multitude of species of I. is very great. The species of coleopterous I. alone, or beetles, are more numerous than all those of vertebrated animals together.

A few I. are important for their usefulness to man, and a greater number for the injuries which they inflict. Of the former, bees and silkworms deserve to be first named; and after them the cochineal insect and cantharides or blistering-flies. There are a few others to which we are indebted for substances useful in medicine and the arts, as kermes, lac, galls, etc. Of the injuries inflicted by I., the most serious are those caused by the destruction of herbage and crops, as by the ravages of locusts, of some kinds of caterpillars, and of numerous tribes of coleopterous and dipterous insects. See CORN-FLY: TURNIP-FLY: ETC.

The primary division of I. into those which do not and those which do undergo metamorphosis (*Ametabolia* and *Metabolia* of Leach), has been already noticed. The former are divided into the orders *Thysanura* (q.v.) and *Parasita* (q.v.) or *Anoplura*, and all are included in the order *Aptera* (see APTEROUS I.) or wingless I. of Linnæus. The I. undergoing metamorphosis, which are far more numerous, are divided into two great groups, *Mandibulata* and *Haustellata*, the former having the mouth fitted for mastication, the latter for suction. The *Mandibulata* form the universally recognized orders *Coleoptera*, *Orthoptera*, including *Dermoptera* of some entomologists, *Neuroptera*, and *Hymenoptera*; the *Haustellata* from the orders *Hemiptera*, includ-

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ing *Homoptera* of some, *Lepidoptera*, *Strepsiptera*, *Diptera*, and *Suctoria* (*Aphaniptera* of some). For a newer classification, see ZOOLOGY.

Fossil Insects.—Several causes conspire to make the remains of I. in the stratified rocks comparatively rare, such as their possession of the power of flight, their soft and speedily decomposing bodies, and the extent to which they are preyed upon by other animals. That they were abundant during some periods is, however, evident. In the Lower Lias, several bands of limestone occur, which, from the abundance of insect remains contained in them, have been called 'insect limestone.' They are crowded with the wing-cases of several genera of coleoptera, and I., almost entire, are frequently found. The strongly nerved wings of some Neuroptera are beautifully perfect. In the Eocene strata, at Auvergne, a considerable thickness of limestone is formed entirely of the indusia or cases of the aquatic larva of a neuropterous insect. Amber from Tertiary strata often abounds in I., captured and inclosed while this petrified gum was in its primitive fluid condition, and now made permanent in the transparent stone, with every minute detail of structure beautifully preserved. The oldest strata in which insect remains have been observed belong to the Carboniferous period. The remains consist of fragments of Neuroptera, Orthoptera, and Coleoptera. The Lower Lias I. belong to various orders; they are generally of small size, indicating a temperate climate. In the Upper Lias, they are frequent; a few specimens have been found in the Oolite proper; and in the Wealden, both land and water forms occur. None have been noticed as yet in the deep sea rocks of the Cretaceous period, but in the newer Tertiary strata they are common, especially in the amber from the lignite beds of Germany, and in the cavern deposits. It is worthy of remark that no new forms have been observed; all are either referred to living genera, or placed in new yet nearly allied genera.

INJURIOUS INSECTS.—*The Buffalo Carpet Beetle.*—An insect brought to this country from Europe about 1876. It is about $\frac{1}{4}$ in. long, black with white spots, and along the middle of the back is a red stripe. The eggs hatch in a short time; and the larvæ, which feed upon carpets, clothing, etc., go through various changes. When mature they enter cracks of the floor or walls, change to pupæ, and appear in the beetle form in cool weather. Remedies: Steam, formed by covering the infested material with wet cloths, thick enough to prevent burning, and passing hot flatirons over them. Taking up and beating carpets; afterward spraying them, and all cracks in or near the floor, with benzine. This substance must not be used near a flame.

The Cucumber Flea Beetle.—A dark-colored insect about $\frac{1}{16}$ in. long, that attacks cucumber and similar plants in the early stages of their growth and feeds upon the upper surface of the leaves. Remedies: Tobacco dust, fine bone dust, or gypsum scented with kerosene oil (1 gill of oil to 2 pecks of gypsum) sprinkled upon and around the plants and repeated every few days,

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The Striped Cucumber Beetle.—A small yellow beetle, with black stripes along its back. It appears early in spring, often suddenly and in large numbers, and proves very destructive to cucumber, squash, melon, and similar plants, of which it eats the leaves and stems. Remedies are the same as for the cucumber flea beetle.

The Flat-headed Apple-tree Borer.—The larvæ of this insect feed upon the sap wood, and sometimes girdle the tree beneath the bark. As they grow they work further into the wood, but return to the surface when they reach their full size; and, after changing to the beetle form, emerge through holes which they cut in the bark. The insect lives but 1 year. It attacks not only the apple but the peach and various forest trees. Remedy: Cutting out the borers or crushing them with a wire thrust into the cavities they have formed. This should be attended to early each autumn. Scraping off the rough bark and thoroughly washing the trunks and larger branches of the trees with a mixture made of 1 qt. soft soap (or 1 lb. hard soap), 2 gals. boiling water, and 1 pt. carbolic acid, tends to prevent attacks by this insect. The wash should be applied late in May and repeated twice at intervals of three weeks.

The Peach-tree Borer.—This is the chief insect enemy of the peach. Eggs are laid, from June to Oct., on the bark of the tree near the ground. The larvæ feed upon the sap wood. Their presence is indicated by gummy exudations. Remedy: Cutting through the diseased bark and crushing the larva with a probe, or destroy it by turning hot water into its channels. Trees should be examined each spring and fall, removing the earth from the trunks to find any that may be working under ground. Covering the trunks, 2 in. below and 8 in. above the ground, with paper or cloth is a preventive.

The Round-headed Apple-tree Borer.—After feeding for some time on the sap wood, this insect works further into the tree, sometimes going nearly through. It lives for 3 years. Its presence may be known by the appearance of its castings, which resemble sawdust, or by a discoloration of the bark under which it is at work. Remedial and preventive measures are the same as for the flat-headed apple-tree borer.

The Squash Vine Borer.—The larvæ feed upon the interior substance of the roots and stems of cucurbitaceous plants. Remedies and preventives: Planting summer squashes very early, to invite attack, and later in the season planting for the main crop between the rows of early ones. Catching and destroying the moths which may be found on the plants at night. Burning the vines as soon as the crop is harvested. Causing the growing vines to root at some distance from the hill by covering the fourth or fifth joint with earth.

The Bed Bug.—This is one of the worst pests of the housekeeper. Eggs are laid in the joints and cracks of walls, bedsteads, and other furniture. The insects multiply rapidly and have remarkable vitality. Remedies;

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Spraying, thoroughly, all infested places with benzine, repeating, if necessary, at intervals of a few days. Kerosene has been successfully used, and fresh pyrethrum powder often proves efficient.

The Harlequin Cabbage Bug.—This insect has spread from Texas over the southern states. It not only feeds upon the cabbage but also upon mustard, turnip, and allied plants. Remedies: Hand picking (throwing the insects into a pan of water upon which a little kerosene has been poured), and afterward killing them with hot water, pyrethrum, kerosene emulsion; or sowing wild mustard with the crops, and when the bugs attack the plants spraying them with pure kerosene. The destruction of leaves upon which eggs have been laid, and the burning of rubbish in which the insects would seek refuge, are useful preventive measures.

The Rose Bug, known also as the rose chafer, and rose beetle, is widely distributed and is destructive to the rose, to the blossoms and leaves of the grape, cherry, apple, and plum, and to grass and other plants. The beetles appear suddenly, in large numbers, remaining about 5 weeks, and as suddenly disappear. Remedies: Hand picking in the morning when the beetles are torpid. Spraying the buds with Bordeaux mixture and arsenites. Choice plants can be protected by covering with netting.

The Squash Bug. A flattened insect, about $\frac{1}{2}$ in. long, of a rusty black color and a very offensive odor. It is destructive to squash plants. Remedies: Hand picking early in the morning when the bugs are sluggish, spraying with kerosene emulsion, or dusting the plants with gypsum, bone meal, or finely powdered tobacco. Destroying the eggs, which are laid on the under surface of the leaves of the squash plant, is the best preventive.

The Tent Caterpillar.—This insect receives its name from the peculiar silken net which it forms for a home. It lives upon the leaves of various trees, and often does great damage in apple orchards. It feeds twice each day and at regular hours. Remedies: Cutting off and burning the twigs upon which nests have been formed, or burning the nests with torches. (This should be done early in the morning when the caterpillars are in the nests.) Spraying with Paris green. Removing and burning twigs upon which eggs have been laid is the best preventive.

The Plum Curculio.—This insect attacks many other fruits but is especially destructive to the plum. The adult feeds upon the leaves till the fruit has commenced to grow, when it attacks the plums. The female cuts crescent-shaped places through the skin, in which she deposits eggs. The larvæ feed upon the fruit, working toward the stone. By the time they are fully grown, if not before, the fruit falls from the tree. Remedies: Jarring the tree every morning while the fruit is exposed to injury; catching the beetles upon a sheet as they fall, and afterward destroying them. Spraying with Bordeaux mixture and arsenites as the blossoms are about to open, after they have fallen, 10 days later, and 15 days after the third application,

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The Horn Fly.—This insect derives its name from a peculiar habit of gathering in large clusters upon the horns of the animals which it attacks. It sucks the blood of its victims and injects a poison which causes severe pain and inflammation. Remedies: Finely powdered tobacco dusted upon the animals. Spraying, every 4 days, the bodies of the cattle with fish oil, to which a little carbolic acid has been added. This mixture can also be applied with a whisk broom or a sponge.

The White Grub.—This is one of the most destructive of the numerous grubs which feed upon cultivated crops. In the beetle form this insect (known as the May Bug, June Bug, and Dor Bug) feeds voraciously, at night, upon the leaves of various trees. The grubs eat the roots of nearly all cultivated plants. They reach their full growth in the fall of the third year and emerge as perfect insects. Remedies: Spraying with Paris green or London purple to destroy the beetles. Fall plowing and brief rotation of crops to destroy the grubs.

The San José Scale.—An insect brought to California, about 1870, on some trees imported from Chili. It infests nearly all kinds of deciduous trees, attacking all parts of the tree and fruit, and is probably the most dangerous insect with which orchardists have to contend. It is common on the Pacific coast, and is found at various points in the East and South. Remedies: Lime—sulphur—salt wash, made by boiling 5 lbs. of unslaked lime and 5 lbs. of sulphur in $8\frac{1}{2}$ gals. of water until it becomes a dark brown liquid—about one hour. Five pounds of lime, with sufficient water to slake it, and 4 lbs. of salt, are mixed and added to the boiled liquid, with sufficient water to make 15 gallons. Used when the lice are young, repeated applications of kerosene emulsion have often proved efficient. All prunings from infested trees should be burned, and no wild or neglected fruit-trees should be allowed near an orchard. Before being set out, all trees from infested nurseries should be subjected for an hour to the action of hydrocyanic acid gas.

The Onion Maggot.—This is one of the worst insect enemies of the onion grower. Eggs are laid on the lower leaves or the bulb of the small onion. The larvæ feed upon the bulbs. There are several broods each year. Remedy: Spraying with carbolic acid emulsion. Preventives: Keeping hens with their broods of chickens in the fields to catch the parent flies. Growing onions on land that did not produce this crop the preceding year.

The Clover-seed Midge.—The larvæ eat the blossoms of clover, thus preventing development of seed. There are 2 or 3 broods each year. Remedy: Mowing when clover heads begin to form, thus delaying blossoming till the first brood has passed, but enabling seed to ripen before the second one appears.

The Grain Weevil.—This insect, of which there are numerous species, attacks nearly all kinds of stored grain. The beetle lays eggs upon the outside, and the larvæ feed upon the interior of the kernels. Remedy: Bisulphide

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of carbon, 20 oz. to 1 ton of grain, and repeated, if necessary, in 6 weeks.

The Boll Worm.—This exceedingly destructive insect is widely distributed. At the South it feeds upon cotton bolls, and at the North, where it is known as the corn worm, upon the growing kernels of Indian corn. It attacks, also, melon, tomato, and various other plants. The adult is a greenish yellow moth with various colored markings, and a dark spot near the middle of each front wing. The larva, when fully grown, is about $1\frac{1}{2}$ in. long, varies in color from pale green to dark brown, and has both light and dark lines along its sides. There are from 2 to 5 broods per year, according to latitude and the character of the season. Remedies: In small patches of corn; hand picking or dusting with pyrethrum. The presence of the larvæ will be indicated by the drying of the silk. In cotton fields; trapping the moths by lights at night. Planting corn, which the insect prefers, among the cotton, and feeding or burning the ears of corn before the larvæ have left them. Fall plowing is a preventive measure.

The Canker Worm.—This insect, known also as the measuring worm, often destroys the foliage of apple and other fruit-trees and of various ornamental trees. Eggs are laid, in clusters, on the branches of trees and hatch about the time the leaves appear. The caterpillars vary in color from a greenish yellow to a dark brown, feed upon the leaves for several weeks, and become about 1 inch in length. This is known as the fall canker worm. Another species, known as the spring canker worm, closely resembles it except that the moths appear in the spring instead of the fall. Remedy: Spraying with Paris green as soon as the eggs are hatched. Preventives: Placing on the trunk of the tree a band of canvas or thick paper, coated with tar or printer's ink, which must be renewed often enough to constantly present a sticky surface which the moths cannot cross in their efforts to ascend the tree. Bands of wool which are tight at the bark but loose outside. Metal collars closely fitted around the trunk.

The Cut Worm.—There are many species but they closely resemble each other in appearance and habits. The moths fly at night and usually deposit their eggs on trees or shrubs. The larvæ seek the ground, feed upon the roots of grass and other plants, and the next season are very destructive to many garden and field crops. They are especially injurious to crops planted on a freshly turned sod. They cut off the stems and eat the leaves of the plants. Remedies: Poisoning, by scattering through the field, before planting, bunches of clover that have been dipped in Paris green. Trapping under boards laid upon the ground. Digging out the worms where evidence of their work is seen. Preventives: Fall plowing and rotation of crops.

The Fall Web Worm.—This insect is found in nearly all parts of the U. S. The caterpillars, hatched from the eggs of a white moth, are yellow, hairy, with black heads, and bodies marked with black. They form webs and feed voraciously upon the leaves of trees. In cold climates there



Infula.



Infundibuliform
Corolla (Stramonium).



Infula, from Statue of Isis in the
Vatican.



Figure showing the Parts of Insects.

Fig. 1.—Coleopter (*Cicindela campestris*). *a*, Head; *b*, Thorax; *c*, Abdomen; *d, d*, Elytra; *e, e*, Wings; *f, f*, Antennæ.



Magnified Drop of Water, Showing
Infusoria, etc.

1, *Volvox globator* (a plant, a low form of Algæ); 2, *Stentor polymorphus*; 3, *Urceolaris scyphina*; 4, *Stylonychia mytilus*; 5, *Zoospermos Ferrussaci*; 6, *Trichoda carinum*; 7, *Monas termo*; 8, *Pandorina morum*; 9, *Bursaria truncatella*; 10, *Vaginicola crystallina*; 11, *Cercaria gibba*; 12, *Zoospermos decumanus*; 13, *Amphileptus fasciola*; 14, *Vorticella convallaria*; 15, *Euptotes truncatus*; 16, *Trachelocerca olor*.

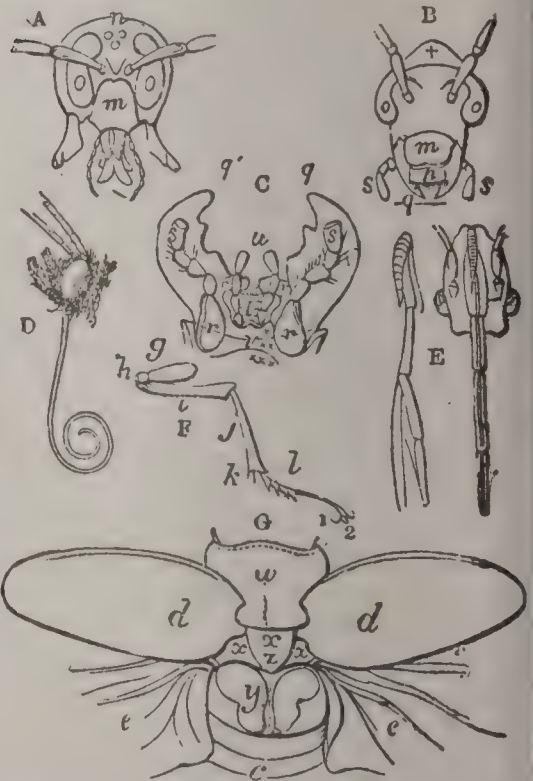


Figure showing the Parts of Insects.

Fig. 2.—A, B, C. Mandibulate Mouths; A, Head of Hornet, and upper side of mouth; *m*, Clypeus; *n*, Ocelli, stemmata, or simple eyes; *o*, Compound eyes; B. Head of Beetle, and C, under side of mouth of Beetle; *x*, Vertex; *m*, Clypeus; *o*, Eyes; *p*, Labrum or upper lip; *q*, Mandibles or upper jaws; *r*, Maxillæ or lower jaws; *s*, Maxillary palpi; *t*, Labium or under lip; *u*, Labial palpi; *v*, Mentum or chin, consisting of three parts—*x*, Mentum; *xx*, Stipes; *xxx*, Jugulum.—D and E. Haustellate Mouths; D, Spiral Mouth or sucker of a Butterfly, called also Antlia; E, Straight sucker of a Plant-bug (*Pentatoma*) called Haustellum.—F, Leg of Stag-beetle: *g*, Coxa; *h*, Trochanter; *i*, Femur; *j*, Tibia; *k*, Calcares or spurs; *l*, Tarsus, which in this instance is pentamerous, or consisting of five pieces: 1, Ungues or hooks; 2, Pulvillus or cushion.—G. Thorax of Stag-beetle: *c*, Abdomen; *d, d*, Elytra; *e, e*, Wings; *w*, Prothorax—upper side pronotum; under side prosternum; *x*, Mesothorax—upper side, mesonotum; under side, mesosternum; *y*, Metathorax—upper side, metanotum; under side, metasternum; *z*, Scutellum.

INSECURE—INSENSIBLE.

is only 1 brood, but in warm regions there are 2 each year. Remedies: Cutting off and burning infested branches as soon as the webs appear. Spraying with Paris green as soon as the larvæ commence feeding.

The Tobacco Worm.—This is the larva of a Sphinx moth. When fully grown it is a large, voracious, green worm about 3 in. long. It is very destructive to the tobacco plant. Remedy: Hand picking. This must be commenced as soon as the worms appear, and repeated at frequent intervals. Preventive: Destroying the moths by trapping on boards covered with molasses, in which fly poison has been mixed. Planting Jamestown weed in spots through the field, and poisoning the blossoms with a mixture of whisky, sweetened water, and fly poison. The poison should be used each evening as long as the moths are in the field.

The Tomato Worm, sometimes called the Potato Worm, is similar to the tobacco worm and is often confounded with it. In the North it is generally known as the tobacco worm; but the insect to which this name properly applies is found mostly at the South. Remedy: Hand picking. Preventive: Trapping the moths.

The Wire Worm.—This is a common name for the larva of various species of click-beetles. The worms are hard, small, and of a yellow or brown color. They often destroy corn by boring into the seed kernels soon after they are planted, and injure grass and other crops by feeding upon the roots. They are particularly destructive in moist soils. Remedy: Fall plowing. Preventives: Trapping the beetles. Rotation of crops, especially a system in which clover is employed.

For various other injurious insects see articles under their respective titles, or references in articles on crops which they infest. For preparation and use of remedies, when not fully noted in this article, see INSECTICIDES AND FUNGICIDES.

INSECURE, a. *in'sě-kūr'* [*in*, not, and *secure*]: not safe; apprehensive of danger or loss. **INSECURE'LY**, ad. *-lĭ*. **IN'SECU'RITY**, n. *-kūr'ĭ-tĭ*, the condition of being insecure; want of confidence in safety; danger; hazard.

INSENSATE, a. *in-sěn'sāt* [mid. L. *insensātus*, insensate: Sp. and It. *insensato*, stupid: F. *insensé*, senseless—from L. *in*, not; *sensus*, sense, reason]: stupid; destitute of sense or mental perception; wanting sensibility. **INSEN'SATELY**, ad. *-lĭ*.

INSENSIBLE, a. *in-sěn'sĭ-bl* [F. *insensible*—from L. *insensibĭlĭs*, that cannot be felt—from *in*, not; *sensus*, sense, reason]: that cannot be felt or perceived; incapable of feeling in mind or body; very slow or imperceptible; very gradual; not emotional; void of emotion or affection; dull; stupid. **INSEN'SIBLY**, ad. *-blĭ*. **INSEN'SIBLENESS**, n. *-bl-nēs*, or **INSEN'SIBILITY**, n. *-bĭl'ĭ-tĭ* [F. *insensibilité*]: loss of the power of feeling or perceiving; want of power to be readily or easily moved or affected; dulness; stupidity.—**SYN.** of 'insensibility': indifference; imperceptibility; numbness;

INSENTIENT—INSET.

apathy; unfeelingness; senselessness; torpor; insusceptibility; hardness; callousness.

INSENTIENT, a. *in-sěn'shĭ-ěnt* [*in*, not, and *sentient*]: not having perception.

INSEPARABLE, a. *in-sěp'ă-ră-bl* [F. *inséparable*—from mid. L. *insepārābilis*: *in*, not, and Eng. *separable*]: that cannot be disjoined or parted. INSEPARABLY, ad. *-blĭ*. INSEP'ARABLENESS, n. *-bl-nēs*, or INSEP'ARABIL'ITY, n. *-bĭl'ĭ-tĭ*, incapability of being separated or disjoined.

INSERT, v. *in-sért'* [L. *insertus*, put or introduced into—from *in*, into; *serĕrĕ*, to interweave, to connect: Sp. *insertar*, to insert]: to set or place in or among; to thrust in; to introduce. INSERT'ING, imp. INSERT'ED, pp. INSERT'ION, n. *in-sér'shŭn* [F.—L.]: the act of placing or setting into another thing, or among other things; the thing inserted; a kind of lace or trimming.

INSESSORES, n. plu. *in'sēs-sō'rĕz* [L. *insessus*, seated or perched upon—from *in*, on; *sedĕō*, I sit]: order of birds called *Passerine* (sparrow-like) *Birds* by Cuvier. IN'SESSO'RIAL, a. *-sō'rĭ āl*, pertaining to.—*Insessores*, in respect of the number of species, form by far the largest order the whole class of birds. Cuvier says: 'Its character seems at first sight purely negative, for it embraces all those birds which are neither swimmers, waders, climbers, rapacious, nor gallinaeous. Nevertheless, by comparing them, a very great mutual resemblance of structure becomes perceptible.' A principal characteristic is in the structure of the feet, which are particularly adapted for perching on the branches of trees, and have three toes before and one behind, the hind toe on the same level with the others. The legs are neither very long nor very strong; nor are the claws in general very long or very sharp. The wings are often long, and the power of flight considerable, but this is not always the case. The neck is not long. The bill has many varieties in length, thickness, etc., being very short and thick in some, very slender in others, but never exhibits the characteristic peculiarities of the accipitrine beak, though there is an approach to them in the shrikes, which are a connecting link between the two orders. The I. with short strong beaks are principally granivorous, those with slender beaks insectivorous; but very many adapt themselves indifferently to both kinds of food. Some feed on pulpy fruits; some on vegetable juices; some chiefly on carrion. The stomach is a muscular gizzard. To the order I. belong the singing birds, and throughout the whole order a variously complicated structure of the lower larynx prevails. The I. pair, but the attachment of the sexes in most of them seems to endure only for a single season. They generally build interwoven nests, and lay numerous eggs. The young are always naked and blind on coming forth from the egg.—The I. are divided into four great tribes or sections, *Dentirostres*, *Conirostres*, *Tenuirostres*, and *Fissirostres*: see these titles.

INSET, v. *in-sĕt'* [*in*, into, and *set*]: to set in; to implant.

INSHADED—INSINUATE.

INSHADED, a. *in-shū'dēd* [*in*, into, and *shaded*]: marked with shades, or with different shades.

INSHEATHE, v. *in-shēth'* [*in*, into, and *sheath*]: to hide or cover, as in a sheath.

INSHORE, a. and ad. *in-shōr'* [*in*, into, and *shore*]: near the shore.

INSHRINE, v.: see **ENSHRINE**.

INSIDE, n. *in'sīd* [*in*, into, and *side*]: the inner part; the part within; the interior: **ADJ.** being within; included or inclosed in anything; interior; internal: **AD.** in the interior; within. **IN'SIDES**, n. plu. *-sīdz*, passengers in the interior of a vehicle; the internal parts.

INSIDIOUS, a. *in-sīd'ī-ūs* [L. *insidiōsus*, cunning, artful—from *insidiā*, troops of men who lie in ambush—from *in*, on; *sēdēō*, I sit: It. *insidioso*: F. *insidieux*]: deceitful; sly; treacherous; intended to ensnare or entrap. **INSIDIOUSLY**, ad. *-lī*. **INSIDIOUSNESS**, n. *-nēs*, craftiness; deceit; treachery.—**SYN.** of 'insidious': circumventive; crafty; wily; artful; designing; deceptive; deceitful; guileful.

INSIGHT, n. *in'sīt* [Ger. *einsicht*; Dut. *inzicht*, insight: *in*, into, and Eng. *sight*]: deep inspection or view; thorough knowledge or skill; introspection.

INSIGNIA, n. plu. *in-sīg'nī-ă* [L. *insignīa*, signs, badges; *insignē*, a badge—from *in*, on; *signum*, a mark: F. *insigne*]: badges or distinguishing marks of office, honor, etc.; signs or visible impressions by which a thing is known.

INSIGNIFICANT, a. *in'sīg-nīf'ī-kānt* [*in*, not, and *significant*: It. *insignificante*; F. *insignifiant*]: without weight or effect; unimportant; contemptible; trivial. **IN'SIGNIFICANTLY**, ad. *-lī*. **IN'SIGNIFICANCE**, n. *-kāns*, or **IN'SIGNIFICANCY**, n. *-kān-sī*, unimportance; want of meaning; triviality. **IN'SIGNIFICATIVE**, a. *-kū-tīv*, not expressing by external signs.—**SYN.** of 'insignificant': immaterial; meaningless; ineffectual; inconsiderable; trifling; mean.

INSINCERE, a. *in'sīn-sēr'* [L. *insincērus*, not genuine, unfair, from *in*, not; *sincērus*, pure, real: *in*, not, and Eng. *sincere*]: false; deceitful; hypocritical. **IN'SINCERELY**, ad. *-lī*. **IN'SINCERITY**, n. *-sēr'ī-tī*, deceitfulness; want of truth or fidelity.—**SYN.** of 'insincere': dissembling; unfaithful; hollow; disingenuous; deceptive; unreliable; imperfect; unsound.

INSINUATE, v. *in-sīn'ū-āt* [L. *insīnūātus*, put or thrust into the bosom—from *in*, into; *sīnūs*, a bend, the bosom, an inlet: F. *insinuer*: It. *insinuare*]: to push or work one's self into favor by gentle means; to wind in; to ingratiate, as into the affections or one's confidence; to hint, generally in a bad sense; to gain on by gentle or artful means. **INSINUATING**, imp.: **ADJ.** insensibly gaining favor and confidence; having the power of pleasing. **INSINUATED**, pp. **INSINUATOR**, n. one who. **INSINUATION**, n. *-ū ā'shūn* [F.—L.]: the act of insinuating; the art or power of pleasing or gaining on the affections; a hint or distant allusion. **INSINUATINGLY**, ad. *-lī*. **INSINUATIVE**, a. *-tīv*, having a tendency to insinuate; stealing on the affections.

INSIPID—INSOLUBLE.

INSIPID, a. *in-síp'id* [F. *insipide*—from L. *insíp'idus*, unsavory—from *in*, not; *sáp'io*, I taste: It. *insipido*]: without taste; unable to gratify desire or satisfy the mind; dull; lifeless; flat. **INSIP'IDLY**, ad. -*lĭ*. **INSIP'IDNESS**, n., or **IN-SIPID'ITY**, n. -*píd'ĭ-tĭ*, want of taste; want of life or spirit. —**SYN.** of 'insipid': tasteless; heavy; spiritless; vapid; unanimated.

INSIST, v. *in-síst'* [F. *insister*—from L. *insis'tērē*, to stand upon—from *in*, on; *sisto*, I stand: It. *insistere*]: to dwell on and press, as a point or argument; to press or urge with earnestness, or by way of a command: to stand upon, as an angle on the arc of a circle. **INSIST'ING**, imp. **INSIST'ED**, pp. **INSISTENCE**, n. *in-síst'ĕns* [F. *insistance*]: the quality of being urgent. **INSISTENT**, a. *in-síst'ĕnt*, standing or resting on, as an insistent wall. **INSISTURE**, a. *in-síst'ūr*, in *OE.*, standing or dwelling on; regularity.

IN SITU, *in sĭtū* [L. *in*, in; *sītūs*, situation, local position]: in its natural position or place—said of a rock or fossil when it is found in the situation or place in which it was originally formed or deposited.

INSNARE, v. *in-snūr'* [*in*, into, and *snare*]: to entrap; to allure; to take by guile; to entangle. **INSNA'RING**, imp. **INSNARED'**, pp. -*snārd'*. **INSNA'NER**, n. -*rēr*, one who.

INSOBRIETY, n. *in'sō-brĭ'ĭ-tĭ* [*in*, not, and *sobriety*]: want of sobriety; drunkenness.

INSOCIABLE, a. *in-sō'sha-bl* [*in*, not, and *sociable*; L. *insōciābilis*, that cannot be joined together]: unsociable; taciturn; incapable of connection.

INSOLATE, v. *in'sō-lāt* [L. *insōlūtūs*, dried in the sun—from *in*, into; *sol*, the sun]: to dry in or expose to the rays of the sun. **IN'SOLATING**, imp. **IN'SOLATED**, pp. **IN'SOLATION**, n. -*lā'shūn* [F.—L.]: exposure to the sun's rays for drying or maturing, as fruits, drugs, etc.; a stroke of the sun.

INSOLENT, a. *in'sō-lĕnt* [F. *insolent*—from L. *insōlens*, or *insōlen'tem*, unaccustomed, insolent—from *in*, not; *sōlērē*, to be accustomed—*lit.*, that is unusual or unaccustomed]: haughty and contemptuous either in language or behavior; insulting; overbearing; very rude. **IN'SOLENTLY**, ad. -*lĭ*. **IN'SOLENCE**, n. -*lĕns* [F.—L.]: impudence; proud or overbearing treatment of others —**SYN.** of 'insolent': impertinent; impudent; haughty; abusive; offensive; saucy; pert; audacious; rude; opprobrious; reproachful.

INSOLIDITY, n. *in'sō-líd'ĭ-tĭ* [*in*, not, and *solidity*]: want of solidity or strength; weakness.

INSOLUBLE, a. *in-sōl'ū-bl* [F. *insoluble*—from L. *insōl'ūbilis*, that cannot be loosed—from *in*, not; *solvo*, I loose: *in*, not, and Eng. *soluble*]: that cannot be dissolved by a liquid. **INSOL'UBIL'ITY**, n. -*bĭl'ĭ-tĭ* [F. *insolubilitéé*]: quality of not being soluble. **INSOL'VABLE**, a. -*vā-bl*, that cannot be solved or explained.

INSOLVENT—INSPIHERE.

INSOLVENT, adj. *ĭn-sŏl'vent* [L. *in*, not; *solvens*, or *solven'tem*, loosening or setting at liberty, paying: Sp. *insolvente*, insolvent]: unable to pay debts; in pecuniary difficulties: N. a debtor unable to pay his debts. **INSOL'VENCY**, n. -*vĕn-sĭ*, inability to pay one's debts: see **BANKRUPTCY**.

INSOMNIA, n. *ĭn-sŏm'nĭ-ă* [L. *in*, not; *somnus*, sleep]: want of sleep; a disordered condition of body characterized by sleeplessness during night: see **SLEEP**.

INSOMUCH, conj. *ĭn-sŏ-mŭch'* [*in*, *so*, and *much*]: so that; to such a degree that—followed by *that* or *so*.

INSOUCIANCE, n. *ĕng-sŭs'ĕ-āngs* [F.]: carelessness; thoughtlessness. **INSOUCIANT**, a. *ĕng-sŭs'ĕ-āng*, careless, thoughtless.

INSPAN, v. *ĭn-spăn'* [Dut. *inspannen*, to put to, as horses to a carriage]: to yoke draught-oxen; to yoke horses to a vehicle. **INSPAN'NING**, imp.: N. the act of yoking horses or draught-oxen. **INSPANNED'**, pp. -*spānd'*, yoked up.

INSPECT, v. *ĭn-spĕkt'* [F. *inspecter*, to examine—from L. *inspectārĕ*, to look into—from *in*, into; *spĕciŏ*, I look or view]: to view or oversee for the purpose of examination or correction of errors; to look into and examine; to superintend. **INSPEC'ING**, imp. **INSPECT'ED**, pp. **INSPEC'TOR**, n. -*tĕr* [F. *inspecteur*]: one who looks into or oversees; a superintendent. **INSPECTORS OF SCHOOLS** (see **EDUCATION**, **NATIONAL** OR **STATE**). **INSPECTION**, n. *ĭn-spĕk'shŭn* [F.—L.]: careful examination; an official survey. **INSPEC'TIVE**, a. -*tĭv*, tending to inspect; inspecting. **INSPEC'TORSHIP**, n. the office of an inspector. **INSPECTORSHIP DEED**, deed executed between an insolvent person and his creditors, whereby they accept a part payment, and allow the debtor to carry on the business under their inspection, with a view to further payments.—**SYN.** of 'inspection': watch; survey; examination; superintendence; insight.

INSPEC'TOR—INSPEC'TOR-GEN'ERAL, in Military Affairs: terms of somewhat vague signification. There are inspectors-gen. of cavalry, infantry, artillery, engineers, militia and volunteers, whose duties are really those which their names infer—viz., the periodical inspection of the several corps of their respective arms, and the pointing out of deficiencies, the corps being under the command, however, of its own officers, and not of the inspector-general. The inspector-gen. of musketry and gunnery instruction are charged with the direct superintendence and ordering of such instruction throughout the army. In the medical dept. the inspectors-gen. of hospitals constitute the highest grade of surgeons.

INSPEXIMUS, n. *ĭn-spĕks'ĭ-mŭs* [L. we have inspected]: the first word of ancient charters confirming a former royal grant or charter.

INSPIHERE, v. *ĭn-sfĕr'* [*in*, into, and *sphere*]: to place within an orb or sphere. **INSPIHER'ING**, imp. **INSPIHERED'**, pp. -*sfĕrd'*.

INSPIRATION.

INSPIRATION, OF THE BIBLE: term denoting the action of the divine mind on the human mind, whereby the latter is both supernaturally informed or quickened and qualified to communicate the information or the influence received. The term *revelation* is used distinctively to express the supernatural *informing*, and *inspiration* to express the remainder; but, in truth, all inspiration, as the word itself bears, implies somewhat of revelation. There is a necessity for supernatural qualification in the reception of truth, only where the truth is such as cannot be or surely will not be reached by the ordinary exercise of the human faculties, but must be in some degree at least supernaturally communicated. There is however a work of I. beyond that of revelation, in the awakening of spiritual faculties and the heightening of emotions to such a degree that a truth vaguely known or sluggishly apprehended shall glow in the soul and issue with flaming power of utterance. Such was the I. which, added to the mere revelation of knowledge, gave to the prophets of old their tongues of living fire.

The *inspiration of the Scriptures* signifies a supernatural qualification or special divine authority in the books of Scripture as depositaries of truth. When the theologian asserts any book of the Bible to be inspired, he means that it possesses an authority different from any other book, that it contains truth not merely as any ordinary book may do, but by a special divine impress. It is different from ordinary books, as conveying under a more immediate and direct divine activity, and therefore in a more authoritative manner, divine truth. All orthodox theologians agree in ascribing this special divine character to Holy Scripture; but further there is no agreement. The mode of inspiration, the degree and extent of it, all are subjects of debate. On one side, are the advocates of what has been often called *plenary* I., but is properly called *verbal* I., and has by some of its opponents been called *mechanical* I.; on the other side are those who advocate various subordinate or partial degrees of inspiration. The advocates of verbal I. contend that the whole letter of Scripture is inspired, that its very words were immediately dictated by the Holy Spirit, so that they are literally the words of God, and not of man. The several writers of Scripture were nothing more than the penmen of the Divine Spirit, under whose control they vibrated as the strings of a harp to the fingers of the harpist. They were as a piece of mechanism touched by God himself. Those who maintain this theory, speak, indeed, of the individuality and diverse characteristics of the writers of the Scriptures, but only as one would speak of the different tones which the same artist would produce from the same musical instrument. The differences are not so much in the moral or intellectual individuality of the writers themselves, as in the diverse aims and uses with which the Holy Spirit employs them; for, according to this theory, the Divine is *all* the substance that there is in Scripture, and the human intelligence is its mere vehicle or passive instrument. The words of Scripture are no less the words of God than if He were heard to

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utter them from heaven. It follows from this theory, that I. is essentially intermitting: it is not a higher quality of any soul, but a divine afflatus, seizing the soul at certain moments, and abandoning it at others. While the canonical epistles of the apostles Paul and Peter are to be held divinely inspired, the words of these apostles at other times may not have possessed any such authority. The authority of the *Scripture* which these apostles have delivered, however, is absolute. The inspired or theopneustic document is throughout faultless, as the sole work of the Divine Spirit—faultless equally in its form and its essence, in its spirit and in its letter. It admits of no gradation; all is equally divine, and therefore equally accurate, whether it relate to some ordinary fact, or to some great truth of the supernatural life, whether it treat of a dogma or of the details of a narrative. An argument advanced for this theory is, that inasmuch as the Bible conveys all its Divine instruction in *words*, any I. which is to have practical value for man must attach to the words: ‘plenary’ I. must be ‘verbal.’ As one of its recent supporters writes: ‘Every verse of the Bible, every word of it, every syllable of it, every letter of it, is the direct utterance of the Most High.’ On this theory, it follows that what God has thus miraculously written, He must have as miraculously preserved. He must also as miraculously have revealed by inspiration what books were to have place in the canon of the Scriptures, to those who in after ages compiled and decided that canon, inasmuch as the Bible itself gives nowhere any approach to a list of its own books.

In opposition to this theory are various others, all of which set certain limits to the perfection of Scripture, or in other words recognize in the Bible a human element as well as the divine I. of the human. Some confine I. to all that is directly religious in the Bible, to all that is directly of the character of revelation, leaving out of the question all that belongs to the sphere of science or ordinary history. Others exempt the form or letter of Scripture, and attribute I. only to its spirit, ideas, or doctrines. Others go still further, and comprise in the fallible form the mode of argument and expository details. Each of these theories supposes I. to be connected primarily with the authors rather than with the books of Scripture; sometimes with the extraordinary gifts accompanying the first preachers of the Word of God, sometimes with the peculiar privileges of prophets or apostles, and sometimes with their special position as immediate witnesses of the facts of revelation and their singular religious aptitude. Whatever differences characterize the advocates of these respective views, it is plain that they all deny the absolute infallibility of the letter of Scripture.

In such a controversy it is our function merely to indicate the more important opinions, and the grounds on which they are held. Those who claim for the letter of the Bible a freedom from all error or imperfection (terming this freedom *infallibility*, which seems an inapt designation for *inerrancy*) do so on the *a priori* ground of neces-

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sity; such infallibility is held to be implied in the very idea of a revelation of the divine will; while those passages which seem inconsistent with the facts of science or of history, or with other parts of the Bible itself, admit, it is maintained, of satisfactory explanation. For many such reconciliations of apparent discrepancies, see the current Commentaries and Harmonies. Those theologians on the other side, who deny the necessity of infallibility, and hold that the inconsistencies referred to never have been and never can be satisfactorily explained away (and the number in this class of theologians has been for some time on the increase), argue in the following way: It is plain, first of all, and especially, that the question is not one to be settled according to any preconception, but according to the evidence of the Scripture itself—first in the *claims* which it makes; secondly in the *facts* which it gives us. As to its own claims, we look in vain in the Bible for any assertion of absolute or literal or verbal infallibility or inerrancy. The high claim of these writings is that they are trustworthy documents, as opposed to fables, delusions, or falsifications; that (in many parts at least, and by inference throughout) they were written by holy men under a special superintendence of the Spirit of God; and especially, that they ‘are able to make men wise unto salvation through faith which is in Christ Jesus,’ being ‘profitable for teaching, for reproof, for correction, for instruction which is in righteousness’ (II Tim. iii. 15, 16). Beyond these claims our only trustworthy idea of the inspiration of the Bible is, as one has said, ‘that which we form from our knowledge of the Bible itself. It is a question to be solved not by speculating what the Bible ought to be, but by examining what it actually is.’ All *a priori* arguments are evidently inapplicable and dangerous on such a subject. The partisans of verbal I. maintain that it is necessary to the preservation of faith, to hold that God has not only revealed the truth to man, but that He has deposited that truth in an infallible record. Not only so; but the infallibility of the canon is no less indispensable; for all would be lost if any doubt was allowed to rest upon any portion of the Word of God. But if an infallible text and an infallible canon be necessary, why not also an infallible interpretation? Without the latter, the two former may be of no use. All may be lost by a false or defective commentary of the sacred text. It is plain that the idea of verbal I. cannot stop short of the conclusion of an infallible interpretation; and even such a conclusion, which upsets Protestantism, by denying the right of free inquiry, would not save it; for an infallible commentary would not necessarily insure infallible instruction—all might still be lost by the weakness, ignorance, or defect of the recipient mind. No infallibility of text, of canon, or even of interpretation, could insure the infallible reception of the truth, even when thus trebly guarded. If we would not be caught, then, in this absurd chain of assumption, we must break its first link, and ask, not what the Bible must be or should be, but what it is. This view

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is strongly argued in a recent treatise on inspiration by M. de Pressensé one of the most distinguished of the French Prot. divines belonging to the evangelical school of theology. According to this writer, who may be taken as the representative of a large class of theological thinkers, the Bible is a mass of documents of varying age and varying authenticity; its text has undergone the usual changes attending the transmission of historical documents; it is marked by the usual inequalities and varieties of style that we find in any other collection of ancient literature; it presents in many cases peculiar difficulties, differences, and even contradictions of detail, scientific and historical errors. All who have studied the Gospels minutely, and especially the quotations in the Gospels and some of the Epistles, from the Old Testament, know that there are various slight and unimportant inaccuracies and misapplications of facts. The same microscope of criticism that reveals to us the depths of the inner meaning of the divine message in its manifold fulness, reveals to us also the imperfections, and even the contradictions, of the human messenger. The following are only a few of the instances in which such 'imperfections and contradictions' show themselves:

1. The recital of the temptation in Matthew and Luke. In the former (Matt. iv. 6-8), the vision from the pinnacle of the temple is placed first; in the latter (Luke, iv. 1-10), that from a lofty mountain takes precedence.

2. In Matt. x. 10, Jesus commands his apostles to take for their missionary journey neither 'scrip, neither two coats, neither shoes, *nor yet staves*': in Mark, vi. 8, he commands them to 'take nothing for their journey, save a staff only.'

3. In the narrative of the Passion, as in that of the Resurrection, there are numerous contradictions of detail resting on a fundamental and striking unity. According to Mark, xiv. 72, the cock is represented as crowing on each of the first and second occasions on which Peter denies his Lord. In the accounts given by the other evangelists, the cock crows only on the third denial (Matt. xxvi. 74; Luke, xxii. 60). The statement of the death of Judas differs materially in Matthew and in the Acts of the Apostles. According to Matthew, Judas casts down the pieces of silver, and departs and hangs himself; and the chief priests *afterward* purchase with the price of his guilt the potter's field for the burial of strangers, hence called the field of blood. According to the Acts of the Apostles, i. 18, Judas himself is represented as having purchased the field 'with the reward of iniquity;' then as having in some way (not explicitly stated in the narrative) met there a bloody death, from which circumstance the field took its name. In the narratives of the Resurrection, it is well known there are numerous variations: and for examples of many errors (it may be of transcription) as to historical facts, compare Mark, ii. 26 with I Sam. xxi. 2-6; and I Cor. x. 8 with Numb. xxv. 9.

4. As to the citations of the Old Testament in the New,

they are almost entirely taken from the Septuagint, and evidently in many cases quoted from memory, with little regard to their exact sense in the original. Thus, Matthew (ii. 6), in applying to the Messiah the prophecy of Micah (v. 2), says of Bethlehem precisely the reverse of the Septuagint. 'Thou art too little to be reckoned among the thousands of Juda,' he translates: 'Thou art in no wise least among the princes of Juda.' In many cases, the New Testament writers, while repeating the inaccuracies of the Septuagint translation, turn them to admirable account; especially in the Gospel of Matthew and the Epistles of Paul. Thus, Matthew (iii. 3) translates with the Septuagint, 'The voice of one crying in the wilderness;' while the Hebrew is, 'The voice of one that crieth, Prepare ye in the wilderness the way of Jehovah' (Is. xl. 3). Compare also Matt. xii. 21 and Is. xlii. 4, also Matt. xv. 8 and Is. xxix. 13.

None of these errors, it is maintained, have any consequence so far as the substantial veracity and spiritual authority of Scripture is concerned. The very fact that a microscopic criticism can detect no more serious inconsistencies in the Scriptural writers, is rightly held to be one of the most striking testimonies that could be given to their truthfulness. Such slight inaccuracies are the mere freedoms which writers, thoroughly honest, and animated with a high interest which overlooks trifles, permit themselves. But however unimportant in themselves, they are considered by many theologians to be utterly inconsistent with a theory of verbal inspiration. However minute, they are recognized as real *discrepancies*—human imperfections in the sacred record—and as consequently proving that the mere text or letter of Scripture is not infallible, that it cannot be regarded as a 'direct utterance of the Most High.'

Inspiration, therefore, according to these theologians, does not imply the infallibility or even the literal inerrancy of the Scriptural text; it is something consistent with scientific, historical, exegetical, and even argumentative errors (witness, to quote no other example, the apostle Paul's allegorical argument about the sons of Abraham, Gal. iv. 22, 25). But, it may be said that there is nothing valid, no divine authoritative element that can survive such deductions: if there are such errors in Scripture, why may it not all be imperfect or erroneous? The sufficient answer is, that it is not so—that, judged by the very same critical tests which detect such errors, the Bible remains an entirely *unique* book in its glow of spiritual light, and its manifestation of deep and eternal truth. Every Christian mind recognizes in it a higher divine knowledge and authority than in aught else. The divine spirit in Scripture makes itself felt, shines forth in every page of it; and this is inspiration in the highest sense, the mind of God meeting the minds of men in Scripture, enlightening, guiding, elevating, purifying them. There is nothing more in reality to be got from any theory than this. An inspired letter, or *word*, or message is nothing to any one in

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itself; the meaning is everything. We must understand the word or message. There is no degree of objective authority that can supersede this subjective process of apprehension on our part. There cannot, therefore, be immunity from error, let the symbol or the text be as perfect as possible. It is only to us what *we* see it to mean; and this meaning, in the case of Scripture, shines in all lands and through age after age with a divine power and lustre such as invest no other book. It is its own divine witness. In such an idea of inspiration, criticism finds nothing inconsistent, nothing impossible, and no higher idea can be well formed of it.

INSPIRE, v. *in-spīr'* [F. *inspirer*—from L. *inspirāre*, to blow or breathe into—from *in*, into; *spīrō*, I breathe: It. *inspirare*]: to breathe into; to draw into the lungs; to draw in breath—the opposite of *expire*; to communicate or instruct by divine influence; to infuse ideas. **INSPIRING**, imp.: **ADJ.** animating; infusing spirit into. **INSPIRED**, pp. *-spīrd'*: **ADJ.** influenced or directed, as by the Holy Spirit; inhaled. **INSPIRABLE**, a. *-rā-bl*, that may be drawn into the lungs, as air. **INSPIRATION**, n. *in'spī-rā shūn* [F.—L.]: act of drawing air into the lungs: infusion of ideas or knowledge into the mind by the supernatural influence of the Holy Spirit, see **INSPIRATION** of the Bible: the secret influence and direction of interested persons, as in the composition of a political article. **INSPIRATORY**, a. *-spī-rā-tēr-ī*, pertaining to inspiration or inhalation. **INSPIRER**, n. *-spī-rēr*, one who. **INSPIRIT**, v. *in-spīr'it*, to animate; to infuse new life or spirit into; to encourage; to cheer. **INSPIR'ITING**, imp. **INSPIR'ITED**, pp. **PLENARY INSPIRATION**, that inspiration under which the inspired person is rendered incapable of error in delivering the inspired message. **VERBAL INSPIRATION**, that in which the very words and forms of expression of the message are communicated.—**SYN.** of 'inspirit': to invigorate; exhilarate; enliven.

INSPISSATE, v. *in-spīs'sūt* [mid. L. *inspissātus*, condensed, concentrated—from L. *in*, into; *spissātus*, made thick]: to thicken, as a fluid by evaporation. **INSPISSATING**, imp. **INSPISSATED**, pp.: **ADJ.** thickened. **INSPISSATION**, n. *-sū shūn*, the act of making a liquid thick.

INST.: a contraction for *instant*: see under **CURT**.

UNSTABLE, a *in-stā'bl*, for *unstable* [*in*, not, and *stable*: L. *instābilis*, that does not stand firm]: inconstant; prone to change; not fixed. **INSTA'BLENESS**, n. *-bl nēs*, or **IN'STABILITY**, n. *-stā-bil'ī-tī* [F. *instabilité*]: changeableness; fickleness; inconstancy.—**SYN.** of 'instability': wavering; unstableness; unsteadiness; mutability.

INSTALL, v. *in-stawl'* [F. *installer*—from mid. L. *installāre*, to place in a seat or office—from mid. L. *in*, into *stallum*, a stall, a seat (see **STALL**)]: to set or place in a stall or official seat, as the outward sign of possession; to invest with, as an office or dignity. **INSTALL'ING**, imp. **INSTALLED**, pp. *-stawld'*. **IN'STALLA'TION**, n. *-lā'shūn* [F.—L.]: the act of giving possession of an office, rank, or order with the accustomed ceremonies; applied especially to the

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ministerial or pastoral office in the church. The ceremony and the name differ according to the office which is conferred, as 'enthronization' or 'consecration' for a bishop in the Church of England, 'consecration' for a bishop in the Prot. Episc. Church, 'induction' (q.v.), or 'institution' (q.v.) for a rector, 'installation' properly for a canon or prebendary. Installation is the customary term for the public establishing of a pastor in non-prelatical churches. The word is also used generally for a formal introduction to any office. INSTAL'MENT, n. *-mènt*, the act of giving possession to an office with the usual ceremonies; part payment, as of a sum of money.

INSTANCE, n. *in'stāns* [F. *instance*—from L. *instantiā*, a being near, urgency—from *instans*, present, urgent—from *instārē*, to be at hand, to urge—from *in*, upon, near; *stārē*, to stand]: example; a case occurring; order of occurrence, as, in the *first instance*; solicitation; importunity: V. to mention or give as an example. IN'STANCING, imp. IN'STANCED, pp. *-stānst*. IN'STANT, a. *-stānt* [F. *instant*, a moment—from L. *instans*, present]: immediate: present; without delay; urgent; current: N. a point in duration, a moment. IN'STANTLY, ad. *-lī*, immediately; directly; at once; without delay. IN'STANTA'NEOUS, a. *-tā'ně-ūs* [It. *instantaneo*; F. *instantané*—from L. *instans*]: done in an instant; occurring or acting at once. IN'STANTA'NEOUSLY, ad. *-lī*. IN'STANTA'NEOUSNESS, n. INSTANTER, ad. *in'stān'tēr* [L.]: without delay; immediately. FOR INSTANCE, for example.—SYN. of 'instance n.': case; illustration; urgency; application; occurrence; occasion; instigation; motive influence; document; act; the Syns. are generally in OE. use;—of 'instant': pressing; importunate; earnest.

INSTANTER: see under INSTANCE.

INSTATE, v. *in-stāt'* [*in*, into, and *state*]: to set on place, as in a rank or condition. INSTA'TING, imp. INSTA'TED, pp.

IN STATU QUO, *in stāt'ū kwō* [L. in the position in which]: in the position in which it was; in the position that things were in before.

INSTEAD, ad. *in-stēd'* [*in*, into, and *stead*: AS. *on-stede*, in the place: Dut. *stede*, a place]: in the place or room of. INSTEAD OF, a prepositional phrase; in room of; in place of.

INSTEEP, v. *in-stēp'* [*in*, into, and *steep*]: in OE., to soak or steep well; to macerate; to lie under water. IN-STEEP'ING, imp. INSTEEPED, pp. *in-stēpt'*.

INSTEP, n. *in'stēp* [*in*, into, and *step*]: the arch or raised part of the human foot near its junction with the leg; the part of the hind leg of a horse reaching from the ham to the pastern-joint. *Note*.—INSTEP is a probable corruption of Eng. *in-stoop*, that is, the inbend or arched part of the foot.

INSTERBURG, *in'stēr-bûrg*: town of Prussia, province of E. Prussia, pleasantly situated on the left bank of the Angerap, 15 m. w.n.w. of Gumbinnen. It contains a

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castle, and several educational institutions. Cloth-weaving, tanning, brewing, and distilling, with trade in corn and linseed, are carried on. I. had its origin in a castle of the Teutonic Order of Knights, built here at an early period. At the close of the 16th c., it had attained the rank of a town, which increased considerably after the 17th c., about which time a number of Scottish families settled at I. on account of its trade. Pop. (1895) 23,546.

INSTIGATE, v. *in'stĭ-gāt* [L. *instigātus*, incited, stimulated: It *instigare*: F. *instiguer*]: to urge or incite to wrong or crime; to set on or encourage. **IN'STIGATING**, imp. **IN'STIGATED**, pp. **IN'STIGATOR**, n. *-tēr*, an inciter to ill. **IN'STIGA'TION**, n. *-gā'shŭn* [F.—L.]: incitement to evil or wickedness; impulse to commit a crime or evil act. —**SYN.** of 'instigate': to urge; provoke; incite; stimulate; spur; impel; animate; tempt; goad; set on.

INSTIL, or **INSTILL**, v. *in-stĭl'* [F. *instiller*—from L. *in stillārē*, to pour in by drops—from *in*, into; *stillo*, I drop] to pour into by drops; to infuse by drops; to infuse slowly or by small quantities, as into the mind. **INSTIL'LING**, imp. **INSTILLED'**, pp. *-stild'*. **INSTIL'LER**, n. one who. **IN'STILLA'TION**, n. *-lā'shŭn* [F.—L.]: the act of infusing by drops or small quantities, as of principles into the mind. **INSTIL'MENT**, or **INSTILLMENT**, n. anything instilled; that which is instilled.—**SYN.** of 'instil': to implant; infuse; drop into; inculcate; ingraft.

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INSTINCT, n. *in'stīngkt* [F. *instinct*, instinct or inclination—from L. *instinctus*, suggestion, impulse]: the natural impulse or disposition by which animals are guided in performing those actions necessary for their well-being and the continuation of their species: ADJ. moved; animated. INSTINC'TIVE, a. *-stīngk'tiv* [F. *instinctif*]: acting without the intervention of reason or deliberation; spontaneous. INSTINC'TIVELY, ad. *-lī*, by instinct; by the impulse of nature alone.—*Instinct* has by many writers been assigned to brutes as taking the place of reason in man. Thus the power of self-preservation is considered as reason in man, and as instinct in the brutes; but this contrast does not contain a real opposition. There is much that is common in the impulses of men and animals. When an animal, having found a morsel agreeable to its taste, masticates and swallows it, and takes up another of the same, the mental operation is not essentially different from what a human being would go through in the like circumstances. In both instances, we have an example of the exercise of Will, or volition, which operates to promote the pleasures and ward off the pains of the sentient being.

The most important meaning connected with the term Instinct, is to designate that which contrasts with experience, education, and acquired knowledge. The original or innate tendencies and powers of the mind are to be distinguished from the powers that grow up in the course of the animal's experience of the world, and its companionship with other living creatures. There has been a disposition to underrate the acquired aptitudes of the inferior animals, and to refer their capability of self-preservation purely to their natural or primitive endowments. But in fact, men and animals alike possess both instincts and acquisitions; for though in man the preponderance in numbers, or at least in variety, of aptitudes is greatly in favor of the acquired, he, too, must start from something primordial, in which his acquired powers cohere.

In the first place, there are certain actions of importance to the safety and well-being of the individual that are termed Reflex, or Automatic. They seem almost out of the sphere of mind proper, as they are performed even unconsciously. Among these are the propulsion of the food along the alimentary canal, sneezing, respiration, etc. In all these, we have important activities, which are inherent in the constitution, and are performed as effectually at the beginning of life as at the full maturity of the being.

In the second place, there is a certain original provision for Rhythmical and Combined Movements among the active organs, more especially those concerned in Locomotion. Thus, there is a natural tendency to alternate the limbs, though the human infant cannot turn this to account for the ends of walking at once, as some of the quadrupeds can. From this alternation, the two eyes and the two sides of the face are specially exempted, and brought under another arrangement equally primitive—namely, concurrence. But all these cases alike illustrate the presence of an origi-

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nal mechanism of the frame, by which the movements are grouped up to a certain point.

In the third place, it may be safely maintained that there is an inborn tendency in all animals to *act somehow*, or to put forth the energies that they possess, without waiting for the stimulus of their sensations. The Spontaneous Activity is shown more or less in every creature after rest and nutrition (see SPONTANEITY). Destitute of any special direction at the outset, it yet prompts to a great many experiments or trials upon things, in the course of which the animal discriminates the suitable from the unsuitable by means of its sensations, and thereby learns to follow the one and eschew the other.

Fourthly, in connection with our Emotions, there are certain primitive links of mental state with bodily manifestation, which constitute a natural language of the feelings understood by the whole human race. The meaning of the smile, the frown, the sob, the contortion of pain, is uniform, and therefore instinctive. See EMOTION.

Fifthly, the power of will or volition, though it can be shown to be a *growth*, must have some primitive and instinctive elements in the constitution to start from. See WILL.

Sixthly there must be certain primordial powers of the human Intellect. What these are, has been much disputed. Every one must concede the existence of some intellectual forces or faculties, e.g., Discrimination, the basis of all knowledge; Retentiveness, the faculty of holding everything that is acquired; and agreement, or Similarity (see INTELLECT); but it is contended by one school that we possess not merely powers of receiving knowledge by our contact with the world, and our consciousness of our minds but *actual notions or ideas* that cannot be traced to our experience of the material or mental phenomena that we encounter. This is the doctrine of innate ideas, intuitions, intuitive conceptions, *a priori* cognitions and judgments, first truths, etc. See COMMON SENSE, THE PHILOSOPHY OF.

Animals possess, as a rule, the instincts of human beings, with some that are special to themselves. They have the Reflex Actions above enumerated; they have, even in a more decisive form, the primitive combined movements for locomotion and other purposes; they have the spontaneous activities that come under control in their voluntary acts; they have emotional manifestations that are emittant, though their organs of expression are fewer; they have certain rudimentary powers, which are developed by experience into the activity of the will.

There are certain intellectual judgments that in man are mainly, if not wholly, the result of experience, but in animals are instinctive. The chief of these is the appreciation of distance and direction; which is shown in the ability to take an aim, as in birds pecking their food soon after they are born. The higher quadrupeds begin to feed themselves in a space of time that seems too short for acquisition. Animals seem also to have instinctive notions of things, as in the case of the aquatic animals knowing water

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at first sight, a fact generally affirmed, and not easy to contradict. In the same way, they may know their food at first sight before tasting it.

It is in connection with Sociability, that we have the largest compass of undoubted instincts. Animals seem to know their own species by instinctive perception. Predatory animals certainly recognize their prey by instinctive perception; the young kitten is aroused by the sight of a mouse; the dog pursues a cat with a decision and vehemence that could not be given by education. So animals that are preyed upon intuitively dread their captors.

While Pleasure and Pain must be regarded as fundamental attributes of the mind, inseparable from its working, the more special modes of feeling called Emotions, as Love, Anger, Fear, are states superinduced upon the primary modes of feeling, and as they appear from the earliest moments of life, they are properly termed instincts, being common to man and to animals.

It is in the region of moral and spiritual intuition, that man stands apart from all other animals. They show reasoning power as really as he, though in far lower and more limited range; but none of their many admirable instincts rise to the height of his intuitions concerning God, the absolute righteousness, and the eternal life. Among the most notable instincts are the constructions of forethought—as the nests of birds, the cells of bees and wasps, the ant-hillocks, the beaver's dwellings, the spider's web; also the precautionary movements of animals, as in the migrations of birds and fishes, according to season. The extraordinary anecdotes of the sagacity of some animals as, the dog, the horse, the cat, the elephant, do not, properly speaking, exemplify instinct; they involve experiment, memory, and reason, which animals are capable of in a greater or less degree, and with great individual differences, even in the same species. Respecting these various instinctive aptitudes, the account given until lately was that each distinct animal species was originally created so; and that the powers belonging to each were handed down without change from parents to offspring. A new rendering of the phenomena has been given in the hypothesis of *Evolution*, according to which as applied to mind, instincts are merely experiences: and acquisitions that have become hereditary. The following from Herbert Spencer illustrates this theory of instincts: 'Though reflex and instinctive sequences are not determined by the experience of the *individual* organism manifesting them, yet the experiences of the *race* of organisms forming its ancestry may have determined them.' Hereditary transmission applies to mental peculiarities as well as to physical peculiarities. While the modified bodily structure produced by new habits of life is bequeathed to future generations, the modified nervous structure produced by such new habits of life is also bequeathed; and if the new habits become permanent, the tendencies become permanent. Let us glance at the facts: Among the families of a civilized society, the changes of occupation and habit from generation to generation, and the intermarriage of families

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having different occupations and habits, greatly confuse the evidence of mental heredity. But it needs only to contrast national characters to see that mental peculiarities caused by habit become hereditary. We know that there are warlike, peaceful, nomadic, maritime, hunting, commercial races—races that are independent or slavish, active or slothful; we know that many of these, if not all, have a common origin; and hence it is inferable that these varieties of disposition, which have evident relations to modes of life, have been gradually produced in the course of generations. In domesticated animals, parallel facts are familiar. Not only the forms and constitutions, but the dispositions and instincts of horses, oxen, sheep, pigs, fowls, have become different from those of their wild kindred. The various breeds of dogs exhibit numerous varieties of mental character and faculty permanently established by mode of life; and their several tendencies are spontaneously manifested. A young pointer will point out a covey the first time he is taken afield' (Spencer's *Psychology*, I., 422).

What is deemed the strongest evidence for the evolution theory of instincts is the remarkable similarity between instincts and acquisitions. Our instincts are just the powers that we need for our support and preservation, and that we should acquire by trying what actions are best suited for this purpose. An animal coming into the world unable to adjust the movements of its limbs, head, and mouth, to pick up the food that lies before it, would have to learn these movements as quickly as possible. Once acquired, they persist, and if very strongly embodied in the nervous system, they may be transmitted in a more or less perfect form to the next generation. Even granting that the transmission is not full and complete, a sufficient trace may be left to render the acquisition comparatively short. There are many instincts that need a certain amount of practice to make them operative; the first attempts at locomotion in most animals are feeble and awkward. The force of this argument is by some considered to be met by reverting to the *first* animal that 'acquired' the necessary movements for feeding: how came he to start on the path of acquisition without some instinctive impulse? and if he could acquire without inherited acquisition, what need of heredity to account for the acquisitions of his successors? Probably there is something of the truth in both the old and the new theories; each may need to be modified by the other. But, see Romanes, *Animal Intelligence* (1882); *Mental Evolution in Animals* (1884); and articles in *Nature* (1884).

INSTITUTE, v. *in'stī-tūt* [L. *institūtus*, placed, set up—from *in*, in; *stātūō*, I cause to stand, I put: F. *instituer*, to establish]: to commence or set in operation; to found or originate; to establish; to invest with the spiritual part of a benefice: N. [F. *institut*]: established law; settled order; a literary or philosophical society; in *Scotch law of entail*, the person first mentioned or described as entitled to take the entailed estate; all after him are called substitutes **INSTITUTE**, **THE**, in *English law* mode of citation or reference

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to Chief-justice Coke's great work, in four volumes, on English law. Another name for the first part of it is *Coke upon Littleton*, owing to its being a commentary by Coke upon a work of Littleton. The second book is a comment on acts of parliament, the third is a treatise on the pleas of the crown, and the fourth on the different kinds of courts. IN'STITUTES, n. plu. *-tûts*, a book of elements or principles; particularly applied to the elementary treatise on the Roman or civil law; a commentary (see LAW: LAW, ROMAN or CIVIL). IN'STITUTING, imp. IN'STITUTED, pp. IN'STITUTOR, n. *-tér* [F. *instituteur*]: one who founds or institutes. IN'STITU'TION, n. *-tû'shûn* [F.—L.]: the act of establishing; that which is prescribed or founded by authority; an establishment, public or social; a system or society established for promoting a particular object; the ceremony of investing a clergyman with the spiritual part of a benefice (see below). INSTITUTIONS, n. plu. applied to the laws, customs, etc., of a country. IN'STITU'TIONAL, a. *-shûn-ûl*, instituted by authority; elementary; also IN'STITU'TIONARY, a. *-ér-î*. IN'STITU'TIST, n. one who writes elementary rules or instruction. IN'STITU'TIVE, a. *-tîv*, having the power to establish. INSTITUTES OF MEDICINE, the science of physiology as the basis of medicine.—SYN. of 'institute, v.': to settle; set up; erect; appoint; ordain; originate; found; commence; begin; ground; educate; instruct; invest; fix; enact; prescribe.

IN'STITUTE OF FRANCE: French national association for cultivation of the fine arts, literature, science, and philosophy. On the revival of letters, associations for mutual intercourse and co-operation, called Academies (q.v.), were formed in Italy and France, one of which, composed of poets of no great note, was converted by Richelieu into a national institution, under the name of *Académie Française*, and met for the first time 1637, July 19. The chief object of this institution was to render the French language pure, eloquent, and capable of treating the arts and sciences; and by the 26th article of its statutes, it pledged itself to compose a dictionary, a treatise on rhetoric, and a treatise on poetry. (The great Dictionary, much criticised then and since, was published 1694.) The influence of the *Académie* on the French language and literature has naturally been in the main conservative, and directed on 'taste' rather than on originality. It boasts on its roll of members most of the eminent French writers, though it rejected La Bruyère, Boileau, and Molière (as being a player).—The taste for devices, inscriptions, and medals, which prevailed in the 17th c., suggested to Louis XIV. the foundation of the *Académie des Inscriptions*, 1663, for the immediate object of examining his collection of medals and other antiquities. In 1716, its title was changed to the *Academy of Inscriptions and Belles-lettres*.—The third Academy in order, the *Académie Royale des Sciences*, was founded by Colbert 1666, remodelled by Pontchartrain 1699, and reconstituted as a branch of the Institute 1816.—The painter Le Brun founded 1648 an *Académie de Peinture*, for which he obtained a charter

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1655; and Colbert remodelled and established it 1664, as the *Académie Royale de Peinture et Sculpture*, with which was afterward incorporated the *Académie Royale d'Architecture*, founded 1671.

All these Academies were suppressed by an edict of the Convention, 1793, Aug. 8; but 1795, Oct. 25, the Directory established a great national association, for the promotion of the arts and sciences, called the *Institut National*. It was at first divided into three classes—viz., Sciences Physiques et Mathématiques; Sciences Morales et Politiques; Sciences de Littérature et Beaux-Arts; but on the suppression of the second class by the First Consul 1803, the remaining classes were re-arranged as follows: Sciences Physiques et Mathématiques; Langue et Littérature Française; Histoire et Littérature Anciennes; Beaux-Arts; and this arrangement continued during the Empire. 1816, Mar. 21, Louis XVIII. restored the names of the old Academies to the four classes of the Institute—1. *L'Académie Française*; 2. *L'Académie des Inscriptions et Belles-lettres*; 3. *L'Académie des Sciences*; 4. *L'Académie des Beaux-Arts*, the general title, 'Institute of France,' becoming successively modified by the epithet 'Royal,' 'Imperial,' or 'National,' in correspondence with the political changes in France. An ordinance of 1832 re-established the old second class as a fifth Academy, *L'Académie des Sciences Morales et Politiques*, and this organization still subsists.

The following table gives the complement of members and correspondents for each Academy 1883:

	Memb. ers.	Acadé- mi- ciens Libres	Associes Etrangers.	Corre- spondents.
1. Académie Française.....	40			
2. " des inscriptions et Belles- lettres.....	40	10	8	50
3. " des Sciences	68	10	8	100
4. " des Beaux-Arts.	49	10	10	40
5. " des Sciences Morales et Poli- tiques.....	40	6	6	48
	229	36	32	238

Each Academy has its own jurisdiction and work, an agency and secretaries; the library and the valuable collections of the Institute are common to the five; the common fund is managed by a committee of ten members (two from each Academy), under the presidency of the minister of public instruction. Members are elected by ballot, the election requiring to be confirmed by govt., and members of one Academy may be elected as members of any or all of the other four. Each member has an annual salary of 1,500 francs, and each sec. of an Academy 6,000. The members of the *Académie Française* receive a *jeton de presence*, which, if they attend all the meetings, raises their

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salary to 5,000 francs each, and five charged with the compilation of the Dictionary get besides 1,500 francs. Those engaged on a history of French literature get 2,400 francs each. The *Académie Française* meets one hour, the other four Academies two hours a week; each has also one public annual sitting; and Oct. 25 there is a general public meeting of the whole five. All the Academies, with the exception of the first, have a certain number of *académiciens libres*, *associés étrangers*, and *correspondants*; the 'académiciens libres' have the right only of attending the meetings of the Academy; the 'associés étrangers' are foreign members.

The *Académie Française* occupies itself with grammar, rhetoric, poetry, French literature, and especially the continual improvement of the dictionary of the French language. It has the disposal of a prize of 2,000 francs each year for eloquence and poetry alternatively, and of foundation prizes (1) to 'a poor Frenchman who has done the most virtuous action throughout the year,' and (2) to 'a Frenchman who has written and published the book most conducive to good morals' in the course of the year, etc. The *Académie des Inscriptions et Belles-lettres* has for its subject history in its most comprehensive sense, including numismatology, and the study of monuments of every kind, and the works particularly of Greek, Latin, and oriental authors, not yet translated into French. It has in its gift, besides smaller prizes, a prize of 2,000 francs, and three medals, of 500 francs each, for the best works on the antiquities of France. The *Académie des Sciences* has for its subject statistics, pure and mixed mathematics, medical science, etc.; and has the gift of numerous prizes, two of which are of 6,000 francs. The *Académie des Beaux-Arts* occupies itself with painting, sculpture, architecture, engraving, and music; and with the preparation of a dictionary of the fine-arts. The *Académie des Sciences Morales et Politiques* discusses mental philosophy, law and jurisprudence, political economy and statistics, general and philosophical history, and politics, administration, and finance; and has the gift of two prizes of 1,500 francs each, besides a decennial, a quinquennial, and other prizes. There is also a Bordin prize in the gift of each Academy; and two general prizes—one annual, the other triennial—in the gift of the Institute.

Each year a sum is voted by the French govt. for the general fund of the Institute, and from this fund are paid the allowances of members, salaries of the secretaries and other officials, and several prizes; also experiments, printing, and other expenses.—See Potiquet's *L'Institut National de France*; Bouillier's *L'Institut et les Académies de Province*, *Annuaire de L'Institut*, *Memoires de L'Institut*, etc.

INSTITUTION, in Church Law. final and authoritative appointment to a church benefice—especially a bishopric—by the person with whom such right of appointment ultimately rests. Thus, in the Rom. Cath. Church—even after the 'election' of a bishop by the

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chapter, or his 'nomination' by the crown, when that right belongs to the crown—it is only the pope who confers 'institution.' In the usage of the Church of England, I. is a conveyance of the cure of souls by the bishop, who, or whose deputy, reads the words of the institution, while the clerk kneels. The I. vests the benefice in the clerk, for the purpose of spiritual duty, who thereupon becomes entitled to the profits thereof. But his title is not complete till induction (q.v.).

INSTRUCT, v. *in-strūkt'* [L. *instructus*, arranged, trained, instructed—from *in*, in; *strūĕrĕ*, to pile up: It. and F. *instruire*—*lit.*, to pile up or build one thing into another]: to impart knowledge to; to teach; to give directions to; to advise or give notice to. **INSTRUCTING**, imp. **INSTRUCT'ED**, pp. **INSTRUC'TOR**, or **INSTRUC'TER**, n. *-tĕr* [F. *instructeur*]: one who imparts knowledge to. **INSTRUC'TRESS**, n. fem. *-trĕs*, a woman who imparts knowledge. **INSTRUC'TIBLE**, a. *-tĭ bl*, capable of being instructed. **INSTRUC'TION**, n. *-shŭn* [F.—L.]: the act of teaching or informing the understanding; information; counsel; authoritative direction; order. **INSTRUC'TIVE**, a. *-tĭv* [F. *instructif*]: conveying knowledge; serving to inform. **INSTRUC'TIVELY**, ad. *-lĭ*. **INSTRUC'TIVENESS**, n. *-nĕs*.—**SYN.** of 'instruct': to inform; educate; institute; direct; acquaint; apprise; advise; indoctrinate; enjoin; command; order; in *OE.*, to model; form;—of 'instruction': teaching; mandate; education; breeding; training; indoctrination; advice; command.

INSTRUMENT, n. *in'strŭ-mĕnt* [F. *instrument*—from L. *instrumen'tum*, a tool—from *instrŭō*, I prepare, I set in order—from *in*, on; *strŭō*, I pile up, I build: It. *strumento*—*lit.*, that which prepares or sets a thing in order]: a tool; a machine; a machine for the production of musical sounds (see **INSTRUMENTS**, **MUSICAL**); that by which something is prepared, produced, or done; a will or testamentary writing; writing containing the terms of a contract; an agent, often in a bad sense. **IN'STRUMEN'TAL**, a. *-tĭl*, pertaining to an instrument; serving to promote or effect some object; not vocal, as instrumental music. **IN'STRUMEN'TALIST**, n. *-ĭst*, one who plays on a musical instrument. **IN'STRUMEN'TALLY**, ad. *-lĭ*. **INSTRUMENTAL'ITY**, n. *-tĭl'ĭ-tĭ*, agency of anything, as means to an end. **IN'STRUMENTA'TION**, n. *-tŭ'shŭn* [F.]: the act of using an instrument; in *music*, the arrangement of a musical composition to be performed by a number of different instruments; a musical composition for an orchestra or band (see below). **IN'STRUMEN'TIST**, n. *-tĭst*, one who.

INSTRUMENTA'TION, in Music: arranging of music for a combined number of instruments. The nature and character of the musical ideas must determine whether the I. shall be simple or artistic, and perhaps complex; the latter being the case when some of the instruments take a more prominent part than others. For both purposes, a thorough knowledge of every instrument in the orchestra is absolutely necessary, as without this I. becomes only a deafening mass of sounds. The stringed instruments, from

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their nature, in most cases, form the principal parts of a score, around which the other instruments move, without depriving them of their importance. The wind instruments represent, more or less, a subordinate chorus, which may again be divided into two kinds, viz., the wood instruments and the brass, which, with the stringed instruments, give three essentially different choral effects, that may be mixed together in endless variety. A knowledge of the art of I. is acquired only by great experience; at the same time much may be learned by consulting the following works: *Die Instrumentirung für das Orchestra*, by Sundelin; the German text-books on I. by Marx and Lobe; Berlioz, *Traité d'Instrumentation*; Gassner, *Partiturkenntniss*.

INSTRUMENTS, MUSICAL: machines for producing musical sounds. They are in three classes—stringed, wind, and percussion. Stringed instruments are of three kinds: those whose sounds are produced by friction, as the violin, viola, violoncello, etc.; by twitching with the finger or otherwise, as the harp, guitar, mandolin, etc.; by striking, as the pianoforte and dulcimer. Wind instruments are of two kinds, viz., the reed species—as the hautboy, clarinet, etc.—and the flute species, as the flute, flageolet, etc. The trumpet, horn, trombone, and all similar wind instruments, are generally classed among the reed instruments; but whether the sound is produced by the lips of the blower acting as a reed, or by the compressed stream of air, as in flute instruments, is not yet determined. Percussion instruments are those which on being struck produce only one fixed sound, as the drum, triangle, cymbals, tambourine, etc. Whatever material may be used to form a musical instrument, there are only two means of producing musical sounds, and these are by the vibrations of a fixed elastic body, such as the string of the violin or pianoforte, the reed of the hautboy, bassoon, etc.; or by the vibrations of a confined column of air put into motion by a stream of compressed air, as in the flute, flageolet, and all the ordinary flute species of organ-pipes.

INSUBJECTION, n. *in'süb-jěk'shùn* [*in*, not, and *subjection*]: want of subjection.

INSUBORDINATE, a. *in'süb-ör'dĩ-nāt* [*in*, not, and *subordinate*]: not submitting to authority. **IN SUBORDINATION**, n. *-nā'shùn* [F.—L.]: disobedience to lawful authority; state of disorder.

INSUBSTANTIAL, a. *in'süb-stān'shāl* [*in*, not, and *substantial*]: in *OE.*, for unsubstantial.

INSUCKEN MULLETURES, in Scotch Law: see **THIRLAGE**.

INSUFFERABLE, a. *in-sűf'fēr-ă-bl* [*in*, not, and *sufferable*]: that cannot be borne or endured; intolerable. **INSUFFERABLY**, ad. *-lĩ*, to a degree beyond endurance.

INSUFFICIENT, a. *in'sűf'fĩsh'ěnt* [*in*, not, and *sufficient*]: not sufficient; inadequate to any need, use, or purpose; incapable. **INSUFFICIENTLY**, ad. *-lĩ*. **INSUFFICIENCY**, n. *-ěns*, or **INSUFFICIENCY**, n. *-ěn-sĩ*, inadequacy of power

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or ability; incapacity; incompetency; deficiency.—**SYN.** of 'insufficient': inadequate; unfit; unequal; incommensurate; incompetent; incapable.

INSUFFLATION, n. *in'săf flă'shŭn* [L. *in*, in; *sufflātus*, blown up, puffed out]: the act of blowing gas or air into a cavity of the body. **INSUFFLATOR**, n. *-ter*, instrument for blowing burned alum or other powder into the larynx or other deep-seated part.

INSULAR, a. *in'sū-lēr* [F. *insulaire*—from L. *insulāris*, an islander—from *insulā*, an island]: of or pertaining to an island; surrounded by water. **INSULARLY**, ad. *-lī*. **INSULARITY**, n. *-lār'ī-tī*, state of being insular. **INSULATE**, v. *-lūt*, to place or set alone or apart; to place in a detached situation; to separate by a non-conductor. **INSULATING**, imp. **INSULATED**, pp.: **ADJ.** standing by itself; not connected. **INSULATOR**, n. *-tēr*, one who insulates; a non-conductor of electricity. **INSULATION**, n. *-shŭn*, the state of being detached from other objects. **INSULAR-CLIMATE**, in *meteor.*, such a climate as exists in an island, where the sea tempers the heat of summer and the cold of winter. It is opposed to a continental or excessive climate.

INSULT, n. *in'sŭlt* [F. *insulte*—from L. *insultus*, leapt out or against—from *in*, in; *săltō*, I leap: It. *insulto*—*lit.*, the act of springing or leaping at or upon]: any abuse offered to another in words or actions; an indignity: **V.** *in-sŭlt'* [F. *insulter*]: to treat with indignity or insolence either by words or actions. **INSULTING**, imp.: **ADJ.** conveying an insult. **INSULT'ED**, pp. **INSULT'ER**, n. *-ēr*, one who. **INSULT'INGLY**, ad. *-lī*. **INSULTATION**, n. *-tŭ'shŭn*, in *OE.*, abuse or injurious treatment.—**SYN.** of 'insult, n.': affront; outrage; contumely; abuse;—of 'insulting': abusive; insolent; contemptuous.

INSUPERABLE, a. *in-sŭ'pér-ă-bl* [F. *insupérable*—from L. *insupērābilis*, that cannot be passed over—from *in*, not; *super*, above or over: It. *insuperabile*: Sp. *insuperable*]: that cannot be overcome; insurmountable. **INSUPERABLY**, ad. *-blī*. **INSUPERABLENESS**, n. *-bl-nēs*, or **INSUPERABILITY**, n. *-bīl'ī-tī*, the quality of being insuperable.

INSUPPORTABLE, a. *in'sŭp-pōrt'ă-bl* [*in*, not, and *supportable*: F. *insupportable*]: that cannot be borne or endured; insufferable. **INSUPPORTABLY**, ad. *-blī*. **INSUPPORTABLENESS**, n. *-bl-nēs*.

INSUPPRESSIBLE, a. *in'sŭp-prēs'sī-bl* [*in*, not, and *suppressible*]: not to be suppressed or concealed. **INSUPPRESSIVE**, a. *-sīv*, not able to keep under; same as 'insuppressible.'

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INSUR'ANCE: contract of indemnity, whereby one party, in consideration of a specified payment, called a 'premium,' undertakes to guarantee another against risk of loss; or contract whereby one party, in consideration of such premium, agrees to pay another a certain amount on the occurrence of a specified event. The first principles of I. appear to have been acted on at a very early period, since—without attaching undue importance to the opinions of writers who contend, on the authority of Livy, that those principles were known during the second Punic war, or that Emperor Claudius can be considered an insurer, because, to encourage the importation of corn, he took all the risk of loss or damage concerning it himself—there are extant rules of sundry 'guilds,' or social corporations of the Anglo-Saxons, whereby, in return for certain fixed contributions, the members guarantee each other against loss from 'fire, water, robbery, or other calamity.' It was, however, first to cover maritime casualties that I. in its commercial aspect seems to have been undertaken. As early as 1435, the magistrates of Barcelona issued an ordinance relating to this class of business, and we find in the speech of the Lord Keeper Bacon, on opening Queen Elizabeth's first parliament, the allusion, 'doth not the wise merchant, in every adventure of danger, give part to have the rest assured.' The merit of being the first to apply mathematical calculations to the valuation of human life belongs to the famous John de Witt, pensionary counselor of Holland, whose report to the states general on the valuation of life annuities, has been lately brought to light. The first I. company established in Britain appears to have been the 'Amicable,' 1696; not the office known by that name now, but the one known as the 'Hand-in-Hand.' Omitting the gambling and other objectionable projects for which the science of I. has been held responsible, it would exceed the limits of the present article to give any detailed account of even the more legitimate applications of it which are current at the present day: the traveller can be protected from the pecuniary loss entailed from damage by rail or flood; the gardener from the devastation of the hailstorm; the farmer from the inroads of disease among his cattle; and employer and employed alike reap the benefit of a guarantee on fidelity. The amount of confidence placed in the stability and integrity of the greater number of life-offices now existing, is not exceeded in any other commercial interest.

While every known form of I. is carried on in the United States, there is no general law governing the conduct of the business. Till about 1856, the various companies in each branch of the business carried on their operations according to the principles that prevailed in England, with such modifications as American business methods and interests made necessary. Massachusetts was the first state to insist upon an official supervision of all I. business transacted within its limits by companies chartered there or elsewhere, and much of that state's most beneficent legislation has been in the interest of improved, accurate, and equitable methods of conducting the business and for the complete protection

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of policy-holders. The establishment of a state I. dept. there, in which was vested the entire control of all I. business in the state, and the enactment of special laws for the management of the companies, placed the business on a firmer footing than it previously had, and gave to the public an adequate guarantee of fairness and responsibility. In 1859 N. Y. followed the example of Mass., and since then nearly every other state has created an I. department. The absence of a general system enforced by every state, and the radical differences on identical subjects in the I. statutes of the several states, naturally led to confusion in practice and to litigation in settlements. In Mass. it was insisted that all foreign companies (those chartered elsewhere) carrying on business in Mass. should observe the legal requirements established for its own companies, and that its own companies operating elsewhere should conform to the laws of Mass., not those of the states in which agencies had been established. Other states in general allowed outside companies to carry on business according to the laws of the states whence their charters were derived. The great increase in I. business after the close of the civil war rendered more imperative an approximate unification of I. statutes, and legislatures, state I. depts., I. corporations, and some of the most expert mathematicians in the country labored for this end. The results may be briefly stated: the majority of level premium and natural premium life I. companies now follow the Mass. and N. Y. life standards, with a possible preference for the former, and the majority of fire I. companies follow the N. Y. fire standard. Where state I. depts. exist, companies are required to deposit a stipulated amount, usually \$100,000 to \$200,000, with the dept., which, known as deposit capital, is held to pay liabilities created in the state in case a company becomes insolvent. Outside companies have to deposit similarly, and generally the maximum amount authorized by the state in which they seek business. All are obliged to submit annual reports in great detail, keep proper reserves, promptly to make good any impairment of capital, and to permit a thorough investigation of their affairs by officers of the depts. at stated periods and whenever the public interest or allegations of wrong-doing may demand; and all are liable to be summarily wound up by the depts. for fraudulent practices. In this article are considered life, fire, marine, and miscellaneous insurance.

Life Insurance.—In the United States the companies are distinguished as *stock* or *proprietary*, *mutual*, and *mixed* as to organization, and *level premium*, *natural premium*, and *assessment* as to system of operation. A *stock* company is one organized on the cash capital subscribed by its projectors. The capital is held as a pledge for the payment of policy-holders' claims while premiums are accumulating, and as the liability is limited to the aggregate amount of policies in force it is necessary to provide only a sum sufficient to meet those liabilities. No policy-holder has any voice in the management of the company, nor any share in the profits of its business. A *mutual* company is one con-

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stituted by persons who are themselves insured, who corporately insure others, and who as policy-holders control the management by electing directors from among themselves, and receive in various forms the annual profits. As these companies are organized without any capital, it is necessary that they should accumulate more quickly than stock companies a fund to meet liabilities; hence they charge premium rates in excess of the amount that will really effect the insurance, viz.: a reserve element, a mortality element (together constituting the net premium), and the 'loading' or expense element, which is an addition to the real cost of insurance to provide for operating expenses and an occasional excess of mortuary loss. A *mixed* company is one organized with a stock capital, in which policy-holders have no managing voice, but which does or does not yield them a share in the profits according to their form of insurance, mutual or stock. A company doing business on the *level premium* system requires advance payment of premiums, makes a contract with the insured called a policy, indicates in the policy the exact sum payable to the beneficiary, and keeps the premiums *level* or the same each year of the paying period excepting where they may be reduced by dividends. A company doing business on the *natural premium* system requires advance payment of premium, makes a contract with the insured (policy), indicates in the policy the exact sum payable to the beneficiary, insures for one year only or a fractional part—3 or 6 months—renewable from time to time at the option of the insured without further medical examination, and charges a progressive premium, one that increases each year beyond the rate of the preceding year, but may be reduced somewhat by dividends. Every life premium under the *level premium* system is composed of the reserve, mortality, and expense elements; and every life premium under the *natural premium* system, of the mortality and expense elements. In 1883 a new form of the *natural premium* system was perfected by Sheppard Homans, author of *The American Experience Table of Mortality*, in which the expense of management is limited by policy contract to \$3 per annum on each \$1,000 of insurance, regardless of age, a definite amount of insurance from \$1,000 to \$15,000 is guaranteed for one year, 6 months, 3 months, or one month, with the right to renew and extend, the rates of mortuary premium increase from year to year as age advances, and 75 per cent. of the maximum mortuary premium is separately invested and constitutes the current death fund, and 25 per cent. constitutes the special mortuary reserve fund. A company doing business on the *assessment* system classifies its members by age-periods; fixes a different rate of assessment (premium) for each class, and calls assessments either for a single death, a specified number of deaths, at specified intervals of time, or when the amount of money on hand falls below the aggregate of immediate liabilities or existing claims. Some of these companies do not designate on their certificates of membership a definite sum that will be paid to the beneficiary, others specify the sums—from \$1,000 to \$10,000—that will be paid to mem-

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bers of their several classes. The methods of some such companies have in recent years been criticised severely as insecure, and many have failed and been wound up by state I. authorities.

Another form of I. that has attained wide popularity in the United States is known as the co-operative. Among the first if not the very first organization to adopt this form was the order of Freemasonry. The rate of admission was graded by age, assessments of \$1 or \$1.10 were levied whenever a death occurred, and the beneficiary of a member received \$1 for each member at the time of his death. The order of Odd Fellows then organized similar associations; and some still follow the above plan, while others classify their members by age-periods, vary rates of admission and assessment by classes (according to age), and pay different amounts to members of each class. The expense fund, always comparatively small, is made up from the admission fees, the excess of assessment payments, lapses, and—where sufficient funds have accumulated for investment—interest. In some associations in both orders all accumulations beyond a specified sum for investment are kept separate, and when they amount to sufficient to pay a whole death claim, the beneficiary is paid from this surplus and no assessments are levied. To this class belong also a large number of secret organizations chartered or incorporated, unlike Masonic and Odd Fellow lodges, expressly for insurance purposes. Of such may be mentioned the American Legion of Honor, paying from \$500 to \$5,000; the Order of Chosen Friends, paying \$1,000, \$2,000, and \$3,000; the Knights of Honor, paying \$1,000 and \$2,000; the Royal Arcanum; Knights and Ladies of Honor; Fraternal Legion; Catholic Knights of America; Catholic Benevolent Legion; American Order of Foresters, etc.; and numerous trade and professional organizations. The secret order associations are chartered or incorporated under state laws governing the formation of charitable and benevolent societies, and states having favorable laws in this respect are chosen by the projectors of a new organization in which to have their supreme body placed on a legal basis. Authority is then delegated by the supreme to the grand bodies in each state, and by them to the subordinates. Such societies make their own laws, report only to their supreme bodies, and with few exceptions are wholly beyond the jurisdiction of state I. commissioners. Some states have forced the fraternal associations to make the usual application for permission to do business in them, to deposit in the state I. dept. the stipulated sum—\$100,000 to \$200,000—that is required of all ‘old line’ companies chartered elsewhere, and to report annually to the state commissioner. As it would be impossible for any such association to make the regular deposit in every state in the union where its form of insurance has become popular, the belief is urged before legislative committees that the demand springs from the jealousy of the ‘old line’ companies. There are over 300 secret society orders in the United States, with membership ranging (1889) from 8,650 in the Benevolent Protective Order of Elks, to 594,000 in Odd Fellow-

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ship, and 650,000 in Freemasonry; and a large proportion of these have 'sick and death benefit' features. The assessments are generally graded by age-periods and class amounts (sums insured for), are levied on all members of an order in the United States by the supreme body whenever the amount in the supreme treasury falls below the face of existing claims, and like the level premium remain the same through life. Beneficiaries are paid directly by the supreme treasurer on requisite proofs of death. There are also a number of accident and casualty companies which insure against both disability and death from accidents, paying a stipulated sum weekly for a disability resulting from an accident, and various sums for a death from such cause.

Returning to what are popularly known as the 'old line' companies (a misnomer, for 'old line' companies really are those only which operate on the level premium system), a person desiring to become insured may make his choice from among *whole-life*, *term*, *endowment*, *joint-life*, *annuity*, *survivorship annuity*, *tontine*, *semi-tontine*, *renewable term life*, and *quarterly renewable term life* policies, or, if his means are too limited for him to pay the premiums required for the above forms, he can take insurance in another line of companies doing what is called an *industrial* business, where a really larger premium is paid on a given amount, but is more easily paid because of its division into weekly sums. This form is popular for children from the age of 3 years and poor people, and the weekly payments will run from 5 to 40 cents on \$500. A regular *whole-life* policy, payable at the death of the insured only, may be obtained (1) by the payment of a net single premium, or all the premiums that the mortality tables show that the insured would be likely to pay, in one sum; (2) by equal annual payments through life; (3) by 5 annual payments (the first); (4) by 10 annual payments; (5) by 15 annual payments; and (6) by 20 annual payments. If issued on the mutual plan, cash dividends will be paid every year during the life of the insured; if on the stock plan, no dividends. The mutual plan, carries the highest rate of premium. A *term* policy is one given for a specified number of years and amount, and is paid only when death occurs within the specified term. It is in some respects similar to an endowment policy, but in others radically different. An *endowment* policy is paid at death during the term, or to the insured if living at the end of the term.. It may be (1) an ordinary endowment, (2) a limited payment endowment, or (3) a children's endowment. If *ordinary*, the policy will be payable at the end of a specified number of years to the insured if living, or to his beneficiary in case of his death within the term, on annual premium payments less whatever dividends may be made; if *limited payment*, the conditions will be the same as above, except that all the premiums must be paid in a less time than the endowment period; and if *children's*, or a promise to pay a specified sum on a child's attaining a stated age, the conditions as to the child's death within the period, and the treatment of the premi-

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ums paid, will be set forth in the policy contract. To these some companies add a *semi-endowment* policy, which provides for the payment of the face value of the policy if the insured die within a specified term, but only one-half the amount with whatever dividends have accumulated if he survives the term. A *joint-life* policy is payable on the death of one of two or more persons on whose joint lives the insurance was made. Formerly this was a common form among partners in business, but such policies are now seldom issued. The cost is very high, and the same purpose can be accomplished much more cheaply by each of two or three partners insuring his life for a common sum and assigning his policy to his associates. A simple *annuity* policy provides that in consideration of the payment at one time of a specified gross sum, the company will pay to the annuitant a stipulated sum annually, either for a stated term or during life; and a *survivorship annuity* policy, sometimes taken by one partner for another, by a debtor for a creditor, and otherwise for a business security, guarantees the payment of a stated sum to the person named by the person taking the policy during the period in which the nominee survives the insured. A *tontine* policy is similar in form to the ordinary life, limited payment life, or endowment policy; is issued at the usual rates of premium, which must be paid in full in cash during the whole tontine period without dividend reductions; and is subject to the following stipulations: No dividend is allowed or paid until the insured has survived the completion of the tontine period, and then only when the policy has been kept alive by premium payments, and the policy is not regarded as possessing a surrender value in a paid-up policy or otherwise previous to the completion of the tontine period. The saving to the company effected by these stipulations is credited to those policies which complete their respective periods. If the insured die before the completion of the tontine period (or term of years specified in the policy), the beneficiary will receive only the sum indicated in the policy; but if the insured survive the period he will share with all other members of his class in the equitable division of the accumulated dividends, and may then surrender his policy for a cash payment by the company, or convert it into any other desired form of I. A *semi-tontine* policy differs from a pure tontine in this respect: it contains the same stipulation on the non-payment of dividends, but is treated as ordinary policies in regard to providing a paid-up policy in case of a lapse, or failure to pay the premiums. The *renewable term life* and *quarterly renewable term life* policies have been outlined above in connection with Sheppard Homans's work. See MORTALITY: VITAL STATISTICS: LIFE.

The statistics of life I. are more complete and suggestive than those of any other form of I., and the volume of the business in the United States is far in excess of that in any other country. The latest comparative reports show: I. in force (1902) in the U. S. \$14,206,712,804; Gt. Britain \$3,886,000,750; Germany \$1,320,163,685; France \$695,231,550; Austria \$370,621,530; Scandinavia \$128,213,755; Russia

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\$47,925,979; Switzerland, \$70,390,250. According to the reports of the U. S. census for 1889 there were 59 companies doing business on what is known as the level-premium plan. These had 4,537,285 policies outstanding, amounting to \$3,591,686,504. The capital stock paid up in cash was \$14,547,958. The net value of the policies outstanding computed according to the actuaries' table of mortality with 4 per cent interest was \$618,468,059, and miscellaneous liabilities, such as salaries, etc., brought the total liabilities up to \$635,449,276. The assets showed real estate exclusive of all incumbrances \$80,306,095, cash loans on bonds and mortgages \$288,131,405, on mortgage and stock securities \$36,834,557, to policy-holders \$5,119,486, total cash loans \$330,085,448, reserves on policies \$115,020,326, stocks and bonds owned \$242,696,653, cash in offices of companies and in banks \$38,309,620, total available assets less depreciations \$705,528,212. During the year the total income was \$181,767,097, of which \$140,375,514 was from premium income, \$15,962,661 from mortgage loans, and \$13,401,988 from dividends on bonds and stocks. The disbursements during the year were: for death-claims and additions \$45,134,500, matured endowments and additions \$9,102,139, cash to annuitants \$1,678,543, surrendered policies \$7,687,797, cash surrendered values, including reverted additions in payment of premiums \$4,377,218, dividends to policy-holders \$13,495,678, total to policy-holders \$82,476,926. Policies were in force in the leading states (Dec. 31, 1889) as follows: New York \$2,173,171,543, Connecticut \$343,458,495, New Jersey \$285,975,728, Massachusetts \$256,692,456, Wisconsin \$202,405,923, Pennsylvania \$156,470,858, Ohio \$43,180,551, Vermont \$41,328,769, Michigan \$30,387,256, Maine \$27,204,606, Kentucky \$11,147,082, California \$10,709,571, Iowa \$8,271,971, Kansas \$7,541,500, Maryland \$6,130,712, District of Columbia \$2,688,224, Missouri \$2,199,361, Louisiana \$1,336,000, Nebraska \$1,224,500, West Virginia \$161,398. Of the total New York had 55 per cent. of the number of policy-holders and 61 per cent. of the entire insurance outstanding.

On 1902, Jan. 1, reports were made by 80 level-premium or 'old line' companies with assets \$1,910,784,985, premiums received \$366,273,457, total income \$457,965,754; payments to policy-holders \$192,398,489; total expenditures \$302,829,506, new policies issued number 5,021,684; amount \$2,194,182,667; policies in force number 16,030,724; amount \$9,593,846,948. Reports from 127 assessment cos., including fraternal orders, showed: assets \$39,011,098; assessments collected \$52,515,256; total income \$54,762,061; payments to policy-holders \$45,481,523; total expenditures \$48,811,496; members admitted during the year, 587,237; insurance in force, number of members, 2,987,853; amount \$4,612,865,856.

Fire Insurance.—The laws and practices governing this form of I. approach much nearer to uniformity than those of life I. There are very few life I. companies chartered

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outside the United States doing business here; but nearly every large fire I. company in the world has established costly offices in the principal American cities; and since the 'panic' of 1873 foreign companies have absorbed by purchase the charters and business of many small and struggling American companies. The various companies are distinguished as *stock* and *mutual* as to organization; and *fire exclusively*, and *fire and marine* as to field of operation. The plan of organization of the two forms is practically identical with that of life I. already explained. Every company, whether its field be fire I. exclusively, fire and marine combined, or marine exclusively, is obliged to observe the state I. laws with regard to engaging in business, making a 'deposit capital,' and reporting annually to the state I. depts.; is under the continual supervision of such depts., and liable to be wound up for insolvency or fraudulent practices. In many large cities the various fire I. companies combine to provide an annual fund with which a 'fire insurance patrol,' or a 'salvage corps,' is maintained, to co-operate with local fire depts., and by means of chemical extinguishers, tarpaulins, etc., minimize the losses by fire, and also by the water used in quenching fire. These salvage corps are often called out on 'still' alarms, and subdue incipient fires without a regular fire dept. alarm being sounded; and in some cities the salvage corps receives a fire alarm a few seconds ahead of the regular fire dept., to give it an opportunity (1) to extinguish the fire before it gains headway, or (2), if the fire is beyond its control, to remove or securely cover furniture, goods, and other property.

The aggregate property loss by fires in the United States 1875-89 was \$1,242,817,158, and of insurance loss \$691,779,744. The largest property loss since 1875 was (1893) \$167,544,370, on which there was an insurance loss of \$105,994,577. The property loss (1894) was \$140,006,485, insurance loss \$89,574,699; (1895) property loss \$142,110,233, insurance loss \$84,689,030; (1902) property loss \$140,000,000; insurance loss \$80,000,000.

1. against fire on land is upon buildings, and all species of property, real and personal, that is subject to destruction or direct damage by fire. The contract between the insurer (company) and insured (person) is contained in a policy, in which all the ordinary obligations of both parties are clearly set forth, together with any special stipulations that may be agreed on prior to the execution of the contract. As the 'standard fire I. policy of the state of New York' is now (1889) used by a large majority of the companies in the United States, a glance at its provisions will give a general view of the conditions on which the business is conducted.

A company is liable not beyond the actual cash value of the property at the time any loss or damage occurs; loss or damage is estimated on such value, and in no event exceeds what it would then cost the insured to repair or replace the same with material of like kind and quality; the estimate of loss or damage is made by the insured and the company,

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and, in case of disagreement, by appraisers; and after the determination of the loss or damage the policy becomes payable in 60 days. A company retains the option of taking all or any part of the articles damaged at the determined value, and also to repair, rebuild, or replace property lost or damaged with other of like kind and quality. A policy becomes void if the insured conceals or misrepresents in writing or otherwise any material fact concerning the insurance or the subject of it; if the insured does not truly state his interest in the property; or if the insured perpetrates fraud or swears falsely, whether before or after a loss, touching any matter relating to the insurance or the subject of it. Further, unless otherwise provided by agreement indorsed on or added to the policy, the entire policy becomes void if the insured has, at the time of insuring, or thereafter procures, any other contract of insurance, valid or not, on property covered in whole or in part by the policy; if the subject of insurance be a manufacturing establishment and it be operated in whole or in part at night later than ten o'clock, or if it cease to be operated for more than ten consecutive days; if the hazard be increased by any means within the control or knowledge of the insured; if mechanics be employed in building, altering, or repairing the within described premises for more than fifteen days at any one time; if the interest of the insured be other than unconditional and sole ownership; if the subject of insurance be a building on ground not owned by the insured in fee-simple; if the subject of insurance be personal property and be or become incumbered by a chattel mortgage; if, with the knowledge of the insured, foreclosure proceedings be commenced or notice given of sale of any property covered by the policy by virtue of any mortgage or trust deed; if any change, other than by the death of an insured, take place in the interest, title, or possession of the subject of insurance (except change of occupants without increase of hazard) whether by legal process or judgment or by voluntary act of the insured, or otherwise; if the policy be assigned before a loss; if illuminating gas or vapor be generated in the described building (or adjacent thereto) for use therein; if (any usage or custom of trade or manufacture to the contrary notwithstanding) there be kept, used, or allowed on the above described premises, benzine, benzole, dynamite, ether, fireworks, gasolene, greek fire, gunpowder exceeding 25 lbs. in quantity, naphtha, nitro-glycerine or other explosives, phosphorus, or petroleum or any of its products of greater inflammability than kerosene oil of the U. S. standard (which last may be used for lights and kept for sale according to law, but in quantities not exceeding five barrels, provided it be drawn and lamps filled by daylight or at a distance not less than ten ft. from artificial light); or if a building described in the policy, whether intended for occupancy by owner or tenant, be or become vacant or unoccupied and so remain for ten days.

Companies are not liable for loss caused directly or indirectly by invasion, insurrection, riot, civil war, or commo-

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tion, military or usurped power, or by order of any civil authority; by theft; by neglect of the insured to use all reasonable means to save and preserve the property at and after a fire or when the property is endangered by fire in neighboring premises: or (unless fire ensues, and, in that event, for the damage by fire only) by explosion of any kind, or lightning; but liability for direct damage by lightning may be assumed by specific agreement. In case an insured building or any part of it falls, except as a result of fire, all insurance on both building and contents immediately ceases. Companies are not liable for loss to accounts, bills, currency, deeds, evidences of debt, money, notes, or securities; nor, unless liability is specifically assumed in a policy, for loss to awnings, bullion, casts, curiosities, drawings, dies, implements, jewels, manuscripts, medals, models, patterns, pictures, scientific apparatus, signs, store or office furniture or fixtures, sculpture, tools, or property held on storage or for repairs; nor, beyond the actual value destroyed by fire, for loss occasioned by ordinance or laws regulating construction or repair of buildings, or by interruption of business, manufacturing processes, or otherwise; nor for any greater proportion of the value of plate-glass, frescoes, and decorations than that which the policy bears to the whole insurance on the building described. If the 'standard' policy be issued by a mutual or other company having special regulations lawfully applicable to its organization, membership, policies, or contracts of insurance, such regulations shall apply to and form a part of the 'standard' policy as the same may be written or printed upon, attached, or appended to it.

The provisions for recovering the amount of insurance after a fire are in brief as follows: The insured shall give immediate notice of any loss by fire in writing to the company, protect the property from further damage, separate the damaged and undamaged personal property, put it in the best possible order, make a complete inventory of it, stating the quantity and cost of each article and the amount claimed thereon; and within 60 days after the fire, unless such time is extended in writing by the company, shall render a statement to the company, signed and sworn to by the insured, stating his knowledge and belief as to the time and origin of the fire; the interest of the insured and all others in the property; the cash value of each item thereof and the amount of loss thereon; all incumbrances thereon; all other insurance, whether valid or not, covering any of the property; and a copy of all the descriptions and schedules in all policies; any changes in the title, use, occupation, location, possession, or exposures of the property since the issue of the policy; by whom and for what purpose any building described in the policy and the several parts thereof were occupied at the time of the fire; and shall furnish, if required, verified plans and specifications of any building, fixtures or machinery destroyed or damaged; and shall also, if required, furnish a certificate of the magistrate, or notary public (not interested in the claim as a creditor or otherwise, nor related to the insured) living nearest the

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place of fire, stating that he has examined the circumstances and believes the insured has honestly sustained loss to the amount that such magistrate or notary public shall certify. Should the company claim that the fire was caused by the act or neglect of any person or corporation, private or municipal, the company shall, on payment of the loss, be subrogated to the extent of such payment to all right of recovery by the insured for the loss resulting therefrom, and such right shall be assigned to the company by the insured on receiving such payment. A 'standard' policy by a renewal may be continued under the original stipulations, in consideration of premium for the renewed term, provided that any increase of hazard must be made known to the company at the time of renewal, or the policy becomes void. The policies contain the following blank assignment of interest by the insured, and consent by company to the assignment of interest on the back:

1. *The interest of.....as owner of property covered by this Policy is hereby assigned to..... subject to the consent of THE.....FIRE INSURANCE Co.*
Dated..... Signature of the insured.
2. *THE.....FIRE INSURANCE Co. hereby consents that the interest of.....as owner of the property covered by this Policy be assigned to.....*
Dated..... Signature for Company.

On an assignment of the policy to secure a mortgagee, it should be made payable on its face to such mortgagee, as follows: Loss, if any, payable to *John Doe*, mortgagee.

The rates of fire insurance, on various grades of risk, and kinds and qualities of property, are supposed to be uniform among companies operating in a common field. Nearly every large city has an underwriters' assoc., formed by representatives of the local and foreign (other state and other country) companies for their joint protection and for the equalization of rates. But the competition for business is so strong that most companies risk the penalty of heavy fine for 'cutting' rates, and issue policies at greatly reduced rates. This practice has led to serious complications and the suspension of many companies.

In the first official report on I. by the federal govt. (1880) for the year ending 1879, Dec. 31, the fire, fire and marine, and marine I. companies were grouped, excepting as to the number of each class. They were classified (1) as companies doing business with a joint-stock capital, with a guarantee capital, on the mutual plan, and those doing a farm or local business on the mutual plan; and (2) as companies doing a fire I. business only, a combined fire and marine business, and a marine business only. The total number of companies was 1,647, of which 1,462 did a fire I. business only, 140 a fire and marine, and 45 a marine only: 424 operated on a joint-stock capital, 10 on a guarantee, 235 on the mutual plan, and 978 did a farm or local business on

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the mutual plan. The amount of joint-stock or guarantee capital authorized was \$144,939,200, of which \$99,090,788 was paid up in cash, and \$2,691,051 in notes.

In 1889, according to the census report of 1890, there were 1,926 fire, ocean marine, and inland navigation and transportation I. companies in the United States. During the ten years preceding these companies accepted risks written and renewed \$120,067,235,826; received premiums and assessments in cash \$1,156,450,512, paid losses in cash \$647,663,097. The average amount of premiums received for each \$100 of risks written was 96 cents, losses paid 54 cents. On each dollar of premium the average losses paid was 56 cents. In 1889 the total risks written and renewed on term and perpetual fire I. amounted to \$11,723,575,150, premiums and assessments received \$120,999,991, losses paid \$71,318,911. On each \$100 of insurance the average amount of premiums received was \$1.03 and of losses paid 61 cents, or 59 cents on each dollar of premiums received. On Dec. 31, 1889, the 1,926 companies had assets as follows: real estate less incumbrances \$26,403,861, stocks and bonds \$166,518,092, loans on mortgages and other security \$67,639,170, cash on hand \$23,101,957, other assets \$2,211,232, making total investment assets of \$285,873,512. Premium assets amounted to \$23,645,297. The liabilities were: unpaid losses and claims \$14,733,788, unearned premiums \$94,113,387, other liabilities \$8,337,652. In 1889 the companies were classified as follows: companies having joint-stock capital and covering all insurance risks 434, companies doing similar business with guaranteed capital 2, companies taking fire risks on the mutual plan 51, companies taking marine risks on mutual plan 5, companies insuring all kinds of property on land on the mutual plan 152, companies insuring only dwellings and contents with farm property 1,281.

In 1889 the total assets of three companies by leading states were as follows: Pennsylvania \$357,602,821, New York \$207,363,689, Michigan \$167,704,091, Wisconsin \$121,059,955, Ohio \$96,267,089, Illinois \$71,977,258, Iowa \$66,583,645, Rhode Island \$58,004,050, Massachusetts \$40,077,021, Connecticut \$37,343,942, New Jersey \$33,762,058, Virginia \$30,204,815, Indiana \$28,486,504, Minnesota \$28,006,207, Maryland \$14,560,484, California \$10,820,395, Missouri \$10,154,177.

1902, Jan. 1, 482 of the leading companies doing business in the United States (303 stock and 179 mutual) reported capital \$69,930,423; assets exclusive of premium notes \$450,566,078; net surplus \$162,083,426; cash premiums received during the year \$199,800,505; total cash income \$216,452,381; paid for losses during the year \$112,007,219; dividends \$16,333,011; other expenses \$70,756,489; total expenses \$199,096,719; risks written during the year (est'd) \$25,000,000,000.

Marine Insurance.—In 1880 the total number of companies engaged in marine I. in the United States was 185 (American 153, foreign 32); of these 140 (American 132, foreign 8)

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carried on a combined fire and marine I., and 45 (American 21, foreign 24) a marine I. only. In 1889, Sep., there were but 3 wholly marine companies in New York. The causes of the small proportion of marine I. companies in the United States are found in the facts that nearly every ocean steamship is insured by its own company, that the greater part of its cargo is insured at its home port, and that the comparatively small amount of maritime trade on American bottoms would not support many home companies. It has already appeared that the majority of the companies classed as marine transact a larger fire and inland I. than marine, and are obliged to combine both forms. Marine I. proper covers the ship, the cargo, the freight that the ship earns, and the profits that the cargo brings. The policy contracts usually specify the various risks against which I. may be written, and these in general are the 'perils of the sea,' fire, barratry, theft, piracy, arrests, and detentions, beside which other perils may be included in the policy on agreement between the insurer and the insured. The perils of the sea may include loss or damage resulting from accidents of navigation, collisions, and extraordinary actions of wind and sea; and it is now held that to establish a claim for I. on the ground of theft it must be clearly shown that the theft must have proceeded from without the ship, i.e., that no one on board the ship was in any way connected with the act. The policies are very specific and detailed; and probably the most important part of the whole business is in the warranties, or the pledges given by the insured that certain things do or do not exist, or shall or shall not be done. The insured warrants the soundness of the ship, its ownership, nationality, legality of its cargo and contemplated voyage, and the complete and honest statement of all material facts. A false warranty will render the policy void. In claiming loss or damage by fire there is a close similarity between fire I. on land and marine I. In both events it must be shown that there was no contributory act on the part of the insured, that every precaution was taken to prevent fire, that due diligence was observed as long as possible in the attempt to extinguish it, and that the loss or damage was really occasioned by fire. Damage resulting from lightning or boiler explosion is within the risk of the policy only when fire supervenes, excepting when a boiler explodes from the heat of an existing fire independent of the boiler. So too, the assignment of a policy without the consent of the insurer is generally prohibited. The methods of determining the actual loss or damage, the conditions on which a ship or its cargo may be abandoned and the I. preserved, the circumstances under which a ship-captain is justified in throwing a part of his cargo overboard (see JETTISON), and the determining of the three kinds of average (q.v.), are subject to strict rules in Great Britain and the United States, and these rules show such wide differences that many claims for loss or damage can be settled only by the admiralty courts. Prof. Theodore W. Dwight defines the principle for ascertaining the

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actual loss or damage in this form: as the whole property at risk is to the whole amount of the loss, so is each owner's particular interest to his share of the loss. Hence, a certain percentage of the whole loss is assessed on each owner, according to the value of his interest. 'The values are estimated by rule; the ship and appurtenances are valued as at the end of the voyage, and the cargo at its value at the time and place of discharge.' In the United States there is usage, supported by numerous legal decisions, warranting an insurer abandoning ship and cargo, and so converting a partial into a total loss whenever the partial loss exceeds one-half of the value of the property insured. This 50 per cent. excess of loss is in addition to the deduction of 'one third off, new for old,' which is generally allowed as the benefit of repairs to a vessel, rendered necessary by some peril of the sea. A loss is not total where anything is saved, excepting when salvage is transferred to the insurers by abandonment. 'An abandonment carries with it all rights and claims on account of ship or cargo, so that if the ship be recovered and the voyage completed and made profitable, the insurer will have all the benefit both of the property recovered and of the profits in the way of freights earned, or otherwise.' Losses are *total*, for which the insured recovers to the full amount of his insurance if the property is worth so much, and *partial*, adjusted as above; and total losses are *actual*, when by fire or other peril no part of either ship or goods of any value is recoverable; and *constructive* or *technical*, when portions of the ship or goods of value are recovered, transferred to the insurers by abandonment, and claims laid by the insured for a total loss. After paying the claim, the insurers hold the abandoned property (see SALVAGE) as their own. Fire I. allows no abandonment of damaged property to the company as marine I. does; but in both, when goods are damaged, the insured recovers the difference between the ascertained value of the goods as damaged and the market value of new goods of like quantity and kind.

In 1889 the ocean-marine risks written and renewed amounted to \$1,963,341,452, on which \$14,249,990 was received in premiums and \$9,848,947 paid for losses. On each \$100 of risks written the average premium received was 73 cents and losses paid 50 cents, or 69 cents of losses on each dollar of premium. The inland navigation and transportation risks written amounted to \$429,701,117, premiums \$1,807,385, losses \$1,087,373. On each \$100 of risks written the average premiums received were 42 cents and losses paid 25 cents, or 60 cents of losses on each dollar of premiums. For the ten years from 1880 to 1889 marine-insurance risks were written in the leading states as follows: New York \$10,330,681,541, Massachusetts \$2,339,180,877, California \$1,106,087,106, Pennsylvania \$639,673,263, Louisiana \$509,443,149, Maryland \$332,997,543, Texas \$142,170,579, Rhode Island \$125,971,644, Virginia \$99,946,267, Illinois \$95,303,891, Oregon \$48,870,208, Missouri \$45,088,707, Georgia \$44,110,246, Connecticut \$41,195,796, South Carolina \$40,450,807.

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Miscellaneous Insurance.—Of the miscellaneous forms of I., the *Accident* is the oldest. Tickets can be procured at all the large railroad, steamboat, and steamship offices at the general rate of 25 cents per day, or \$4.50 per month, for which the insurers will pay a weekly indemnity of \$15 on a wholly disabling injury, or \$3,000 in event of death resulting from an accident. Special contracts may be made for double indemnities at double rates. The age of the insured is limited to 16 to 65 years, and women and girls as a rule are insured against death by accident only. The next oldest form is *Plate-glass I.*, in which companies insure against accidental breakage, somewhat on the abandonment plan of marine companies. The glass must be free from cracks or flaws, and properly secured in frames or sashes, excepting when being transported in bulk. In case of breakage the companies may either pay the amount of damage in cash, or, as is most general, take the broken glass and replace it with other of like size and kind. Breakage in consequence of fire or heat therefrom is now so frequently insured against by regular fire companies by special contract in the policy, that strictly plate-glass I. companies usually exclude fire from insurable risks. Disputed claims are referred to arbitrators, policies cannot be assigned without the consent of the companies, companies are not liable for breakage by means of invasion, insurrection, riot, or civil commotion, or of any military or usurped power, and where plate-glass may be damaged or lost in transportation the insurer generally orders of a manufacturer the delivery to the insured of a like quantity, size, and kind. There are also a few companies making a specialty of insuring farm buildings against loss or damage by fire and lightning; and some in the western states, organized as associations by farmers, on the mutual plan, that insure certain grades and kinds of cattle and standing crops against loss or damage from specified causes. Among the more recently established forms of I. is the *Casualty*, based on the legal liability of employers of labor, in which the company insures an employé against accident or death resulting from any cause for which the employer is responsible, and makes settlements with the injured and those who may be killed or die from the results of the injury. (The N. Y. legislature has passed a law fixing at \$5,000 the amount of damages that heirs can claim on the death of a person from causes for which employers are legally responsible). To this form has been added (1889) an *Elevator Accident I.*, based on the legal liability of owners of elevators, in which the company insures owners of buildings against the claims of persons injured in their elevators, whether employés or passengers, and makes periodical inspections of all elevators insured; and a *Steam-boiler I.*, in which the company insures against loss or damage resulting to property from boiler explosions, and on loss of human life, or injury legally liable. In case of temporary injury the compa-

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ny pays the injured person or persons a stipulated sum in cash weekly, with the limit in cash at \$50, and in time 15 months; and in case of death the legal amount (\$5,000), less the aggregate of weekly indemnities, if any, paid. Such companies have every insured boiler thoroughly inspected by trained engineers and inspectors every 3 months while their policies are in force. A clerk, public officer, or other person required to give bonds for the faithful performance of duty, may have his *fidelity* insured by another style of company, whose guarantees are received the same as regularly executed bonds; and the clearness of a title to *real-estate* may be insured by a title and guarantee company, which makes all the searches necessary to establish a clear title and guarantees its legality. Since the co-operative building and loan system has reached its large popularity and success, mutual advantages are derived from a close association of title and guarantee companies with the co-operative societies.

INSURE, v. *in-shôr'* [used for OF. *asseurer*, to insure or assure, by substituting *en* or *in* for *a*: *in*, intensive, and Eng. *sure*: L. *sēcūrus*, secure, safe]: to engage to make good to another the loss, as by fire or at sea, of any specified property, at a certain rate per cent; to engage to pay a certain sum on the arrival of some event, as on the death of a person or the loss of property by fire. INSURING, imp. INSURED', pp. *-shôrd'*, secured against loss. INSURANCE, n. *-shô'răns*, the act of insuring; a contract entered into to secure against loss arising from fire, etc., in consideration of a certain annual payment; the premium or money paid for insuring. INSURABLE, a. *-ră bl*, that may be insured against loss or damage. INSURER, n. *-rêr*, the person who insures; one who engages to make good the losses of another. INSURANCE BROKER, an intermediate agent who acts between the insurance offices and those wishing to insure, as upon ships, the cargo, passengers' effects, etc. INSURANCE COMPANY, a joint-stock association which engages to secure against loss by fire, by shipwreck, etc. INSURANCE POLICY, the document or contract given by an insurance company to a person who has paid the premium, as a guarantee that it undertakes the risk. INSURANCE FOR AID IN SICKNESS, see FRIENDLY SOCIETIES. *Note* —In the use of these and related words, *insure* refers to the periodical payments of a sum of money during life in consideration of a certain large sum being paid to relatives at death: *ensure* is to make sure or certain, and no one can make certain of his life: *assure* and *assurance* are now in *Great Britain* usually restricted to life, and *insure* and *insurance* to fire; in the *United States*, the usage is not uniform: *assure* is correctly applied to a person only, and not to a thing, as I *assure* you, I make *sure*; *assurance* is the state of mind of a person made *sure*: see under EN, also IN 2.

INSURGENT, a. *in-sér'jěnt* [L. *insurgens*, or *insurgentem*, rising up, or raising one's self up—from *in*, in; *surgō*, I rise: Sp. *insurgente*, an insurgent: F. *insurgents*, insur-

INSURMOUNTABLE—INTAPHERNES.

gents]: rising in opposition to lawful authority: N. one who rises in arms against lawful authority. INSUR'GENCY, n. *jèn-sǐ*, the act of rising against lawful authority.

INSURMOUNTABLE, a. *in'sèr-mouent'ä-bl* [*in*, not, and *surmountable*: F. *insurmontable*]: that cannot be surmounted or overcome. IN SURMOUNT ABLY, ad. *-blǐ*.

INSURRECTION, n. *in'sèr-rèk'shün* [L. *insurrectus*, risen up—from *in*, against; *surgō*, I rise: F. *insurrection*]: the active and open hostility against any constituted government or authority by a considerable number of persons; a revolt. IN'SURREC'TIONIST, n. one who favors an insurrection. IN'SURREC'TIONARY, a. *-är-ī*, or IN'SURREC'TIONAL, a. *-äl*, pertaining or tending to insurrection.—SYN. of 'insurrection': rebellion; sedition; revolution; mutiny.

INSUSCEPTIBLE, a. *in'süs-sèp'tǐ-bl* [*in*, not, and *susceptible*]: not capable of being moved or affected; not capable of admitting. IN'SUSCEPTIBIL'ITY, n. *-bǐl'ī-tǐ*, want of capacity to feel or perceive.

INTACT, a. *in-täkt* [F. *intact*, whole—from L. *intactus*, untouched—from *in*, not; *tactus*, touched]: untouched; uninjured.

INTAGLIATED, a. *in-täl'yä-téd* [It. *intagliare*, to carve in, or into relief—from mid. L. *in*, in; *talèärē*, to destroy by cutting (see TALLY)]: engraved or stamped on. INTAGLIO, n. *in-täl'yō* [It.]: stone or gem in which the design is cut or hollowed out—not raised, as in a *cameo*. In *art*, a term the opposite of relief (see ALTO-RELIEVO), denoting the representation of a subject by hollowing out a gem or other substance; so that an impression from the engraving has the appearance of a bas-relief. INTAGLIO RELIEVATO, *-rèl'ī-rä'tō* [It. *rilievato*, relief, swell]: a peculiar kind of intaglio practiced by the anc. Egyptians, in which the highest parts of the figure were on a level with the original surface of the stone.

INTANGIBLE, a. *in-tän'jǐ-bl* [*in*, not, and *tangible*]: that cannot or may not be touched; not perceptible to the touch. INTAN'GIBLY, ad. *-blǐ*. INTAN'GIBLENESS, n. *-bl-nès*, or INTAN'GIBIL'ITY, n. *-bǐl'ī-tǐ*, quality of being intangible.

INTAPHERNES, *in'tä.fèr-nèz*: one of seven Persian noblemen who conspired against Smerdis after he had usurped the crown of that country. After the death of Smerdis, he was so disappointed from not obtaining the crown that he fomented an insurrection against Darius, who had succeeded to the throne. Being arrested, he and all his family were sentenced to death; but his wife gained the compassion of Darius by frequent visits to the palace, and received his pardon and promise to save from death any one of her relations she might select. To the king's astonishment she chose her brother, on the ground that while she could have another husband and more children, she could never have another brother, as both her parents were dead. Declining a second opportunity to select, the king released

INTEGER—INTEGUMENT.

the brother, and I. with the rest of the family was put to death.

INTEGER, n. *in'tē-jēr* [L. *intēgēr*, untouched, whole; F. *intègre*, whole, incorruptible; It. *integro*]: a whole number, in contradistinction to a fraction; the whole of anything.

INTEGRAL, a. *in'tē-grāl* [F. *intégral*—from mid. L. *integrālis*—from *intēgēr*, whole]: whole; entire: N. a whole; an entire thing. **INTEGRALLY**, ad. -lī. **INTEGRANT**, a. -grānt [F. *intégrant*—from L. *integran'tem*, making anew]: making part of a whole; necessary to form a whole. **INTEGRAL CALCULUS**, n. -kāl'kū-lūs [L. *calcūlus*, a pebble]: branch of the higher mathematics, occupied partly with the summation of very small quantities (see **CALCULUS**). **INTEGRATE**, v. *in'tē-grāt* [L. *integrātus*, made anew or afresh]: to renew; to make up, as a whole; to make a thing entire. **INTEGRATING**, imp. **INTEGRATED**, pp. **INTEGRATION**, n. -shūn, the act of making entire: also, see **CALCULUS**.

INTEGRITY, n. *in-tēg'rī-tī* [F. *intégrité*—from L. *integritātem*, completeness, perfectness]: the entire or unimpaired state of anything; uprightness; honesty.—**SYN.**: sincerity; probity; virtue; rectitude; uncorruptedness; purity; entireness; wholeness; soundness; genuineness.

INTEGUMENT, n. *in-tēg'ū-mēnt* [L. *integūmen'tum*, a covering—from *in*, in; *tēgō*, I cover; It. *integumento*; F. *intégument*]: that which naturally covers or invests another thing, as the skin covers the body; in *bot.*, the external cellular covering of plants. **INTEGUMENTARY**, a. -tēr-ī, pertaining to or composed of integuments.

INTELLECT.

INTELLECT, n. *in'tel-lěkt* [F. *intellect*—from L. *intellectus*, discernment as by the senses—from *inter*, between; *legěre*, to gather, to collect—*lit.*, that which has power to choose between]: the understanding; the thinking principle; the faculty of the mind which receives or comprehends the ideas communicated to it. IN'TELLEC'TION, n. -*lěk'shūn*, the act of the understanding. IN'TELLEC'TIVE, a. -*tiv*, able to understand; perceived only by the understanding. IN'TELLEC'TUAL, a. -*tū-āl* [F. *intellectuel*—from L. *intellectū-ālis*]: pertaining to the intellect or mind; mental; having the power of understanding: N. in *OE.*, the understanding; the mental powers or faculties. IN'TELLEC'TUALLY, ad. -*li*. IN'TELLEC'TUALIST, n. one who overrates the understanding. IN'TELLEC'TUALISM, n. -*izm*, the mere culture of the understanding; system of doctrines connected with the intellect.

IN'TELLECT: the thinking principle of our mental constitution; understanding; faculty which receives and comprehends ideas; faculty by which man perceives, conceives, and reasons. Mind has three elementary constituents—Emotion or Feeling, Volition or the Will, and Intelligence or Thought. See EMOTION: WILL. The intellectual powers are explained in part by their contrast with feeling and will. When we enjoy pleasure or suffer pain, we are said to feel; when we act to procure the one or avoid the other, we put forth voluntary energy; when we remember, compare, reason, our intelligence is exerted.

The powers of the I. have been variously classified. Among the commonly recognized designations for them, is that of Memory, Reason, and Imagination, which imply three distinct applications of our mental forces. Reid classified them as follows: Perception by the Senses, Memory, Conception, Abstraction, Judgment, Reasoning. Stewart added Consciousness, to denote the power of recognizing our mental states, as Sensation and Perception make us cognizant of the outer world; likewise Attention (a purely voluntary function, though exerted in the domain of intelligence), Imagination, and the Association of Ideas.

It might be easily shown that in such a classification as the above there is no fundamental distinctness of function, though there may be some differences in the direction given to the powers. There is not a faculty of Memory which is all memory, and nothing but memory. Reason and Imagination equally involve processes of recollection. And with regard to the Association of Ideas, it has been urged by Samuel Bailey (*Letters on the Human Mind*) that if this is to be introduced into the explanation of the I., it must supersede the other faculties entirely; in short, we must proceed either by faculties (as Memory, Reason, etc.) or by Association, but not by both.

For a satisfactory account of the human I. there seems requisite in the view of some a deeper analysis than is implied in the foregoing designations. The misfortune of such an attempt may be that the deeper the analysis the nearer we come to the substantial unity of the intelligence, in which all classifications are merged. Meantime, classi-

INTELLECT.

fications serve rather to reveal the individuality of the classifier's own mind than to discriminate the intellect into its various departments. Thus, one method of classifying deals with the *faculties* or powers, another with the *subjects* which come within the range of the various powers respectively, still another with the *properties* of the intellect as a whole, or of the actions which are ascribed to it. Each method may have a certain use, yet each may have the limitation given by arbitrariness.

A classification which proceeds by the properties of Intellectual action, is the following, which is given by high authority. We find—it is said—at least three facts, or properties, which appear in the present state of our knowledge to be fundamental and distinct, no one in any degree implying the rest, while taken together they suffice to explain all the operations of Intelligence, strictly so called.

1. DISCRIMINATION, or the consciousness of Difference. When we are affected by the difference of two tastes or odors, or sounds or colors—this is neither mere feeling nor volition, but an intelligent act, the foundation of all other exercises of our intelligence. We must recognize the impressions on our senses as differing, before we can be said to have the impression of anything; and the greater our powers of discrimination in any department, as color, for example, the more intellectual are we in that special region. We could have no memory if we did not first recognize distinctness of character in the objects that act on the senses, and in the feelings that we experience. In some of the senses, discrimination is more delicate than in others; thus, Sight and Hearing give us greater variety of impressions than Taste or Smell, and are therefore to that extent more intellectual in their nature. In the course of our education, we learn to discriminate many things that we confounded at first. Every craft involves acquired powers of discrimination as well as habits of manipulation. A man is in one respect clever or stupid, according as his perceptions of difference in a given walk are delicate or blunt.—2. The next great intellectual property is RETENTIVENESS, the property whereby impressions once made persist after the fact, and can be afterward recovered without the original cause, and by mental forces alone. When the ear is struck by a sonorous wave, we have a sensation of sound, and the mental excitement does not die away when the sound ceases; there is a certain continuing effect, generally, though not always, much feebler than the actual sensation. Nor is this the whole. After the sensation has completely vanished, and been overlaid by many other states of mind, it is possible to evoke the idea of it by inward or mental links, showing that some abiding trace had been left in the mental system. The means of operating this revival is found in the so called forces of Association. See ASSOCIATION OF IDEAS.—3. The last great fundamental fact of intellect is Agreement or SIMILARITY. See ASSOCIATION OF IDEAS.—It is claimed that these three properties, in combination with the two powers of the mind (Feeling and Volition or Will), are adequate to explain all

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the recognized intellectual faculties or processes—Memory, Reason, Imagination, etc. Memory is almost a pure case of Retentiveness, or Contiguity, aided occasionally by Similarity. Perception by the senses is only another name for Discrimination, the basis of all characteristic mental appreciation of matter or mind. Judgment is either Discrimination or Similarity, according as it discovers difference or agreement in the things judged of.

Sir William Hamilton, departing from the common classifications of the intellect, adopted the following division into six faculties or powers. 1. The *Presentative* Faculty, the power of recognizing the various aspects of the world without and the mind within, called in the one case External Perception; in the other, Self-consciousness, and sometimes Reflection. 2. The *Conservative* Faculty, or Memory proper, the power of storing up impressions, to be afterward reproduced as occasion requires. 3. The *Reproductive* Faculty, the means of calling the dormant impressions up into consciousness again. These means are, as stated above, the Associating principles. 4. The *Representative* Faculty, for which Imagination is another name, which determines the greater or less vividness of the impressions or ideas thus reproduced. 5. The *Elaborative* Faculty, or the power of Comparison, by which Classification, Generalization, Abstraction, and Reasoning are performed. This, in fact, is one (not the only) application of the general power of Similarity. 6. The *Regulative* Faculty, or the cognition of the *a priori* or supposed instinctive notions of the intellect, as Space, Time, Causation, Necessary Truths, etc. This corresponds to what in German philosophy is called the 'Reason,' as contrasted with 'Understanding,' which deals with experienced or contingent truth.

Regarding the above distribution, it is urged by the propounder of the classification previously mentioned, that 'while the first faculty, the Presentative, coincides with the primary fact of Discrimination, the three subsequent, Conservation, Reproduction, Representation, are merely modes or distinct aspects of Retentiveness. All the three must concur in every case of the effective retention or recollection of anything. The last power, the Regulative, is of course disputed by the opposite school, who refuse to recognize a primary or distinct faculty as giving birth to the ideas in question.' See CONSCIOUSNESS: CAUSE.

Without setting forth any classification as worthy to set aside all others, we may note that probably any one of several widely varying may be used with advantage if the precaution be taken to assign it to its particular range—e.g. of the faculties, or of the subjects, or of the properties of intellectual action; with the further precaution to keep it strictly within its range.

INTELLIGENCE, n. *in-tél'li-jěns* [F. *intelligence*—from L. *intelligētia*, perception, comprehension; *intel'ligens*, perceiving—from *inter*, between; *legēre*, to gather, to collect]: the power of comprehending or discovering; intellectual capacity; understanding; news; information; a

INTELLIGIBLE—INTENDANT.

spiritual being. INTEL'LIGENCER, n. -jěns-ěr, one who sends or conveys news. INTEL'LIGENCING, a. -lĭ-jěns-ing, in *OE.*, conveying information of private or distant transactions. INTEL'LIGENT, a. -jěnt [F. *intelligent*—from L. *intelligēn'tem*]: well informed; skilful; intellectual. INTEL'LIGENTLY, ad. -lĭ. INTELLIGENCE-DEPARTMENT, in *mil.*, a branch of the army to which is intrusted the duty of supplying the officer in command with all necessary intelligence, signalling, etc. INTELLIGENCE OFFICE (properly EMPLOYMENT-OFFICE), place at which information may be obtained, particularly in hiring of servants.—SYN. of 'intelligence': instruction; advice; notice; intellect; notification; skill; knowledge; communication; spirit; mind;—of 'intelligent': knowing; instructed; sensible; understanding.

INTELLIGIBLE, a. ĭn-tě'lĭ-jĭ-bl [F. *intelligible*—from L. *intelligib'ilis*, perceptible—from *legĕrĕ*, to gather, to choose]: clear; plain; perspicuous; that may be understood. INTEL'LIGIBLY, ad. -bli. INTEL'LIGIBLENESS, n. -bl-nĕs, or INTEL'LIGIBILITY, n. -bĭl'ĭ-tĭ, state of being intelligible.

INTEMPERANCE, n. ĭn-tĕm'pĕr-ăns [F. *intempérance*—from L. *intempĕran'tiŭ*, intemperance; *intempĕrans*, intemperate—from *in*, not; *tempĕrārĕ*, to observe proper measure]: want of proper restraint; excess in action or indulgence; habitual over-indulgence in the use of intoxicating liquors (see INTOXICATION). INTEM'PERATE, a. -ăt [L. *intempĕrātus*, immoderate]: not moderate or restrained within due limits; addicted to excess in the use of intoxicants; violent. INTEM'PERATELY, ad. -lĭ. INTEM'PERATENESS, n. want of moderation; excess in indulgence.—SYN. of 'intemperate': immoderate; excessive; drunken; gluttonous; passionate; ungovernable; inordinate.

INTENABLE, a. ĭn-tĕn'ă-bl [L. *in*, not; *tenĕrĕ*, to hold]: in *OE.*, that cannot hold.

INTEND, v. ĭn-tĕnd' [L. *inten'dĕrĕ*, to stretch out, to exert—from *in*, into; *tendo*, I stretch or strain: F. *entendre*, to understand, to conceive: It. *intendere*, to comprehend with the mind, to intend]: to mean; to design; to purpose. INTEND'ING, imp. INTEND'ED, pp.: ADJ. designed; purposed; in *OE.*, having tension. INTEND'ANT, n. [F.—L.]: one who has charge, superintendence, or management. INTEND'ANCY, n. -ăn-sĭ, the office or employment of an intendant, or his district. INTEND'EDLY, ad. -lĭ. INTEND'MENT, n. intention; design. INTENDIMENT, n. ĭn-tĕnd'ĭ-mĕnt, in *OE.*, attention; accurate examination; skill in understanding of; careful thought or consideration.—SYN. of 'intend': to extend; enforce; intensify; strain; regard; attend to; contemplate; meditate.

INTEND'ANT, or INTENDANT MILITAIRE: officer in the French army charged with the organization and direction of all the civil services attending a force in the field. The officers acting under his orders are those in charge of all the finance services, the provisions, stores, hospitals, artillery train, and transport departments, besides the inter-

INTENSE—INTENT.

preters, guides, and others in like temporary services. The *intendant-en-chef* of an army is the representative of the minister of war; and, short of superseding the general's orders, can exercise, in case of need, all the functions of that high officer of state. The intendance is divided into intendants ranking with general officers, sub-intendants with colonels, and assistant-intendants with majors; besides cadets, who receive no pay, and constitute a probationary grade.

Intendant was the name given in France before the Revolution to the overseer of a province. Such permanent officers were appointed first by Henry II. (1551). Under the complete system of centralization established by Richelieu, these intendants, as they were now called, became the mere organs of the royal minister, to the exclusion of all provincial action. To them belonged the proportioning of assessments, the levying of soldiers, etc. The national assembly, 1789, established in each dept. an elective administration. Napoleon virtually restored the intendants, but exchanged the hated name for that of *Præfects* (q. v.).

INTENSE, a. *in-těns'* [F. *intense*—from L. *intensus*, or *intentus*, stretched out, extended—from *in*, on or in; *tendo*, I stretch or strain: It. *intenso* (see **INTENT**)]: raised to a high degree; increased to excess; strained; very close, as intense application; violent; extreme. **INTENSE'LY**, ad. *-lĭ*. **INTENSE'NESS**, n. *-nĕs*, or **INTENSITY**, n. *in-tĕn'sĭ-tĕ*, the state of being raised to a high degree; extreme violence or degree. **INTENSION**, n. *in-tĕn'shŭn* [F.—L.]: the act of forcing or straining; the increase of the energy of a quality—opposed to *remission*. **INTEN'SIFY**, v. *-sĭ-fĭ* [L. *făciō*, I make]: to render more intense. **INTEN'SIFYING**, imp. **INTEN'SIFIED**, pp. *-fĭd*. **INTEN'SIVE**, a. *-sĭv*, stretched; assiduous; serving to give force or emphasis. **INTEN'SIVELY**, ad. *-lĭ*. **INTEN'SIVENESS**, n. *-nĕs*.—**SYN.** of 'intense': forced; unrelaxed; vehement; ardent; fervent; earnest; stretched; strict; keen; biting; severe.

INTENT, a. *in-tĕnt'* [L. *intentus*, stretched out, extended: It. *intento*, intent or bent on a thing: F. *entente*, meaning, purpose (see **INTENSE**)]: having the mind strained or closely fixed on a subject; anxiously diligent: N. the thing aimed at or intended; a design or purpose; drift. **INTENT'LY**, ad. *-lĭ*, earnestly. **INTENT'NESS**, n. close application of the mind; great earnestness. **INTENTION**, n. *in-tĕn'shŭn* [F.—L.]: aim or determination; design; purpose; earnestness. **INTEN'TIONAL**, a. *-shŭn-ăl*, done with design or purpose. **INTEN'TIONALLY**, ad. *-lĭ*. **INTEN'TIONED**, a. *-shŭnd*, in purpose or design—only used when preceded by *well*, *ill*, etc. **WELL-INTENTIONED**, having good intentions. **ILL-INTENTIONED**, having bad intentions. **TO HEAL BY THE FIRST INTENTION**, in *surg.*, to heal, as a wound, without suppuration. **TO ALL INTENTS AND PURPOSES**, or **TO ALL INTENTS**, in all applications or senses, whatever may be meant or designed.—**SYN.** of 'intent and intention': **vlew**; meaning; end; aim; object; scheme; project;—of

INTENTION—INTERCALAR.

‘intently’: steadfastly; fixedly; eagerly; attentively; diligently; sedulously.

INTENTION, To HEAL BY THE FIRST: see under INTENT.

INTER, *ĭn'tēr*: Latin prefix signifying ‘between,’ ‘among,’ as in *intermarry*—the French form is *entre*, as in *entertain*.

INTER, v. *ĭn-tēr'* [mid. L. and It. *interrārē*, to bury—from L. *in*, into; *terra*, the earth: F. *enterrer*, to inter]: to deposit in and cover with earth; to bury. INTERRING, imp. INTERRED, pp. *ĭn-terd'*. INTERMENT, n. *-mēnt*, the act of depositing a dead body in the earth; burial.

INTERACCESSORY, a. *ĭn-tēr-āk-sēs'sēr-ĭ*: in *anat.*, situated between the accessory process of one vertebra and the mamillary process of the next. Used of interaccessory muscles, called the interaccessorii.

INTERACT, n. *ĭn'tēr-ākt'* [L. *inter*, between; *actus*, done]: a short piece between others, as in a play. INTERACTION, n. *-āk'shŭn*, mutual action.

INTER ALIA, *ĭn'tēr ā'lĭ-ă* [L. among others]: among other things.

INTERAMBULACRA, n. *ĭn'tēr-ām'bŭ-lā'kră* [L. *inter*, between; *ambŭlācrum*, that which serves for walking—from *ambŭlō*, I walk about]: in *zool.*, the imperforate plates which lie between the perforate plates, or *ambulacra*, in the shells or crusts of the sea-urchin. INTERAMBULACRAL, a. *-krăl*, of or pertaining to.

INTERAM'NA: see TERNI.

INTERARTICULAR, a. *ĭn'tēr-ār-tĭk'ŭ-lēr* [L. *inter*, between; *articulus*, a little joint]: in *anat.*, a term applied to the cartilages which lie within joints; applied to certain ligaments, as that within the acetabulum.

INTERCALAR, a. *ĭn-tēr'kă-lēr*, or INTERCALARY, a. *-lēr-ĭ* [F. *intercalaire*—from L. *intercālārĭs*, put in between; *intercālātus*, proclaimed that something has been inserted among—from *inter*, between; *cālō*, I call, I proclaim—*lit.*, called or proclaimed between]: inserted in the midst of others—applied to the day (29) added to February in leap-year, and to any months or days occasionally inserted in the calendar to make it correspond with the solar year—see CALENDAR: in *bot.*, applied to the growth of the cell-wall when a new deposition takes place, in such a manner that an interposed piece of cell-wall from time to time appears. INTERCALATE, v. *ĭn-tēr'kă-lăt*, to insert a day or other portion of time; to place between. INTERCALATING, imp. INTERCALATED, pp. interposed; placed between. INTERCALATION, n. *-lă'shŭn* [F.—L.]: the insertion of any portion of time in the calendar out of the usual course; the act of placing between; in *geol.*, something placed between, as subordinate beds of a different nature occurring between the main beds of a series. INTERCALATORY, n. *-lă'tēr-ĭ*, that which is inserted or placed between.

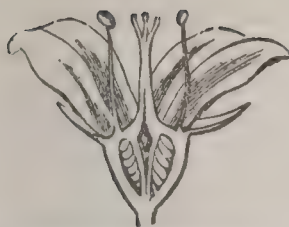
INTERCEDE—INTERCESSION.

INTERCEDE, v. *in'tér-séd'* [F. *intercéder*—from L. *intercedere*, to go or come between—from *inter*, between; *cēdo*, I go: It. *intercedere*]: to interpose; to act as a friend between parties at variance; to plead in favor of one. **INTERCEDING**, imp. **INTERCEDED**, pp. **INTERCEDER**, n. one who.—**SYN.** of 'intercede': to mediate; interfere; intermeddle; intervene.

INTERCELLULAR, a. *in'tér-sěl'ū-lér* [L. *inter*, between; *cellulā*, a little storehouse]: in *bot.*, lying between the cells in the cellular tissue.

INTERCEPT, v. *in'tér-sěpt'* [F. *intercepter*—from mid. L. *interceptāre*, to intercept: or L. *interceptus*, taken or caught between—from *inter*, between; *capio*, I take—*lit.*, to catch between two points]: to take or seize on by the way; to obstruct; to interrupt communication with; to cut off. **INTERCEPTING**, imp. **INTERCEPTED**, pp.: **ADJ.** seized on the way; stopped; included or comprehended between. **INTERCEPTION**, n. *-sěp'shùn* [F.—L.]: the act of seizing or stopping on the way; obstruction of a course. **INTERCEPTIVE**, a. *-tív*, serving to intercept or obstruct.

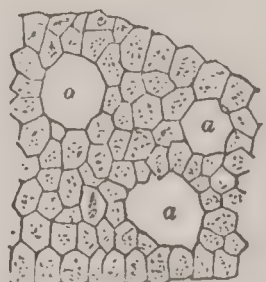
INTERCESSION. n. *in'tér-sěsh'ūn* [F. *intercession*—from L. *intercessiōnem*, an intervention—from *inter*, between; *cēdo*, I go: It. *intercessione*]: the act of interceding; entreaty in favor of another; mediation; interposition with the view of reconciling differences. **INTERCESIONAL**, a. *-ūn-āl*, containing intercession. **INTERCESSOR**, n. *-sěs'sér*, a mediator; one who comes between parties with the view of reconciling them; one who undertakes to plead in behalf of another. **INTERCESSORIAL**, a. *-sō'rī-āl*, pertaining to an intercessor. **INTERCESSORY**, a. *-s'ŕ-ī*, containing intercession; interceding. **INTERCESSION, DOCTRINE OF**, founded on the Scriptural representation of Christ, after having finished his redemptive work on earth and ascended into his state of glory and exaltation, as ever pleading with God on behalf of those whom he has redeemed by the shedding of his blood (Rom. viii. 34; Heb. vii. 25; 1 John, ii. 1). We are not to suppose that God needs to be interceded with, in the sense that he is reluctant to forgive men, or that Christ's intercession makes him more merciful than before. Since it is evident from the whole tenor of the New Testament, as well as from a multitude of special passages, that the sacrifice of Christ on Calvary for the reconciling of sinners unto God, was itself the offering of God's own love to the world (Jn. iii. 16, 17), we must regard the intercessory work of Christ rather as illustrating the eternal holiness of God and the changeless love of the Savior, and as intended to keep continually in view the sacrifice of atoning grace whose tender mercy it develops. The doctrine of the intercession of Christ is held both by Protestants and by Rom. Catholics; but the latter, in addition, believe in the efficacy of the intercession of the Virgin and the saints, who, however, do not directly intercede for men with God, but with the Savior, the sinless One, who alone has the ear of the King of the universe.



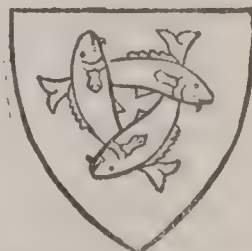
Epigynous Insertion. Hypogynous Insertion. Perigynous Insertion.



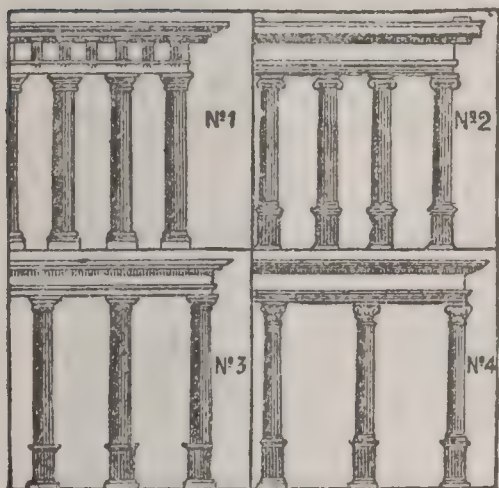
Insulator.



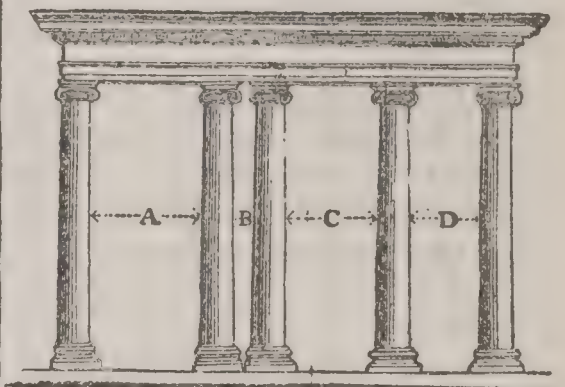
a, a, Intercellular Spaces.



Interchangeably
Posed.



Intercolumniation.

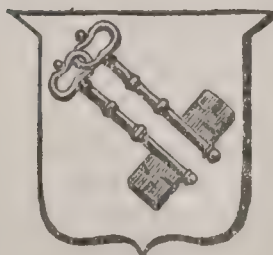


Ionic Intercolumniation.

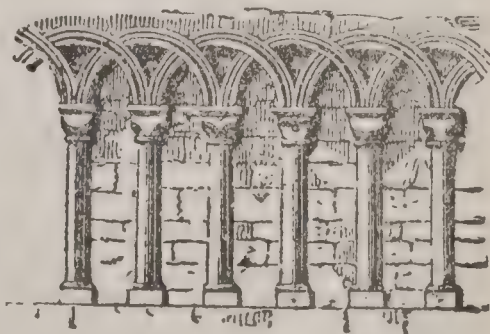
A, Aræostyle; B, Coupled Columns;
C, Diastyle; D, Eustyle.



Three Crescents
Interfretted.



Interfretted



Interlacing Arches, Norwich
Cathedral.

INTERCHAIN—INTERCOMMUNICABLE.

INTERCHAIN, v. *in'tér-chān'* [*inter*, and *chain*]: to link together; to unite closely or firmly.

INTERCHANGE, v. *in'tér-chānj'* [*inter*, between, and *change*: F. *entrechanger*, to interchange—from *entre*, between; *changer*, to change]: to exchange; to put each in the place of the other; to give and take mutually; to succeed alternately: N. *in'tér-chānj*, mutual change, each giving and receiving; alternate succession; commerce; barter. **INTERCHANG'ING**, imp.: **ADJ.** giving and receiving in alternate succession. **INTERCHANGED'**, pp. *-chānjd'*. **INTERCHANGE'ABLE**, a. *-ā-bl*, that may be given and taken alternately. **INTERCHANGE'ABLENESS**, n. *-bl-nēs*, or **INTERCHANGE'ABIL'ITY**, n. *-bil'ī-tī*, state of being interchangeable. **INTERCHANGE'ABLY**, ad. *-bli*, in *her.*, placed or lying across each other, as three fishes, three swords, three arrows, etc., the head of each appearing between the tails, hilts, or butt-ends of the others. **INTERCHANGE'MENT**, *-mēnt*, in *OE.*, a mutual exchange or transference.

INTERCISION, n. *in'tér-sīzh'ūn* [L. *intercisōnem*, a cutting between or asunder—from *inter*, between; *cāsus*, cut]: in *OE.*, interruption.

INTERCLUDE, v. *in'tér-klód'* [L. *interclūdēre*, to close or block up—from *inter*, between; *claudo*, I shut or close: It. *intercludere*]: to shut from a place or course by intervening something; to intercept; to interrupt. **INTERCLU'DING**, imp. **INTERCLU'DED**, pp. **INTERCLU'SION**, n. *-kló'zhūn* [L. *interclū'sus*, closed or blocked up]: a stopping; interception.

INTERCOLLINE, a. *in'tér-kōl'līn* [L. *inter*, between; *collis*, a hill]: a term applied to designate those valley-like spaces or hollows which occur in volcanic regions between the *cols* or crateriform hillocks of accumulation.

INTERCOLONIAL, a. *in'tér-kō-lō'nī-āl* [*inter*, between, and *colonial*]: relating to the intercourse between different colonies.

INTERCOLUMNIATION, n. *in'tér-kō-lūm'nī-ā'shūn* [L. *inter*, between; *columna*, pillar or post]: in *classic architecture*, the distance between the columns of a building, measured at the bottom of the shaft. The I. varies in different examples, but the most favorite distance for the columns to be placed apart is $2\frac{1}{2}$ diameters of the column, which by Vitruvius is called *Eustyle*. The central I. of a colonnade is frequently made wider than the others when required for access to a gate or door. In Doric architecture, the I. is decided by the spacing of the triglyphs, the columns being usually placed under the centre of every other triglyph.

INTERCOMMUNICABLE, a. *in'tér-kōm-mū'nī-kā-bl* [*inter*, between, and *communicable*]: that may be mutually communicated. **INTERCOMMU'NICATE**, v. *-nī-kāt*, to hold mutual communication. **INTERCOMMU'NICATING**, imp. **INTERCOMMU'NICATED**, pp. **INTERCOMMUNICA'TION**, n. *-kā'shūn*, reciprocal communication or intercourse.

INTERCOMMUNION—INTERDICT.

INTERCOMMUNION, n. *in'tér-kóm-mūn'yūn* [*inter*, between, and *communion*]: mutual communion. **IN'TER-COMMU'NITY**, n. *-nī-tī*, mutual communication; mutual freedom or exercise, as of religion. **INTERCOMMUNING**, **LETTERS OF**, ancient writ issued by the Scotch privy council, warning persons not to harbor rebels.

INTERCOSTAL, a. *in'tér-kōs'tāl* [L. *inter*, between; *costa*, a rib: F. *intercostal*, between the ribs]: lying between the ribs; applied to certain respiratory muscles.

INTERCOURSE, n. *in'tér-kōrs* [OF. *entrecours*, intercourse, commerce—from mid. L. *intercursus*, commerce—from L. *inter*, between, and *cursus*, a running]: connection by friendly dealings between persons or nations; familiarity; fellowship; trade.—**SYN.**: connection; communication; communion; dealing; commerce; acquaintance; association.

INTERCROSS, v. *in'tér-krōs'* [*inter*, between, and *cross*]: to cross or breed with other species: see **CROSS**.

INTERCURRENT, a. *in'tér-kūr'rēnt* [*inter*, between, and *current*]: running between or among; intervening; in *med.*, applied to diseases which occur in a scattered manner during the prevalence of epidemic disorders. **IN'TERCUR'RENCE**, n. *-rēns*, intervention; occurrence.

INTERCUTANEOUS, a. *in'tér-kū-tā'ně-ūs* [L. *inter*, between; *cūtis*, the skin]: being within or under the skin.

INTERDEPENDENCE, n. *in'tér-dě-pěn'dēns*, or **IN'TERDEPEN'DENCY**, n. *-dēn-sī* [*inter*, between, and *dependence*]: mutual dependence.

INTERDICT, n. *in'tér-dīkt* [L. *interdic'tum*, a prohibitory order, in mid. L. a kind of excommunication—from *inter*, between; *dictus*, said or told: F. *interdit*]: a prohibiting order or decree; a prohibition issued by the pope restraining the clergy from performing divine service or administering the sacraments in a kingdom, town, etc. (see below): in Scotch law, order issued by the court of session to stay or prohibit a person from an act presumed to be illegal or wrongful; similar to injunction (q.v.): V. *in'tér-dīkt*, to forbid; to prohibit; to debar; to cut off from the spiritual services of the church. **IN'TERDIC'TING**, imp. **IN'TERDIC'TED**, pp. **IN'TERDIC'TION**, n. *-dik'shūn* [F.]: a prohibition; a prohibitive decree; in Scotch law, a process for protection from imposition of persons of imbecile minds (see **IMBECILITY**). **IN'TERDIC'TIVE**, a. *-tīv*, serving to prohibit. **IN'TERDIC'TORY**, a. *-tér-ī*.

IN'TERDICT: ecclesiastical censure or penalty in the Rom. Cath. Church, consisting in the withdrawal of the administration of certain sacraments, of the celebration of public worship, and of the solemn burial service. Interdicts are of three kinds—*local*, which affect a particular place, and thus comprehend all, without distinction, who reside therein; *personal*, which affect only a person or persons, and which reach the person or persons wherever found; and *mixed*, which affect both a place and its inhabitants, so that the latter would be bound by the I. even outside of its purely local limits. The principle on which

INTERDIGITAL—INTERESS.

this ecclesiastical penalty is founded may be traced in the early discipline of public penance, by which penitents were for a time debarred from the sacraments, and from the privilege of presence at the celebration of the Eucharist: but it was only in the mediæval period that, owing to certain circumstances (see EXCOMMUNICATION), it came into use as an ordinary church censure in the then frequent conflicts of the ecclesiastical and civil power. It was designed to awaken the national conscience to the nature of the crime, by including all alike in the penalty with which it was visited. The most remarkable interdicts are those laid upon Scotland 1180 by Alexander III.; on Poland by Gregory VII. on occasion of the murder of Stanislaus at the altar; by Innocent III. on France under Philippe Auguste, 1200; and on England under John, 1209. The description of England under the last-named interdict, as detailed by some of the contemporary chroniclers, presents a strange and striking picture of the condition of the public mind, difficult for our modern ideas to appreciate. It would be a great mistake, however, to suppose that, during the continuance of an I. the people were *entirely* destitute of spiritual assistance. The I. regarded mainly the *solemnities* of public worship; it was permitted to administer baptism, confirmation, and the Eucharist in all cases of urgency; to confess and absolve all who were not personally the guilty participators in the crime which the I. was meant to punish; to celebrate marriage, but without the solemnities; and to confer orders in cases of necessity. And under the popes Gregory IX., Innocent III. and IV., and Boniface VIII., still further mitigations of its rigor were introduced, one of which was the removal of the I. and restoration of public worship on certain great festivals, especially Christmas, Easter, Pentecost, Assumption, and All Souls. The council of Basel enacted very stringent rules as to the use of this penalty, and in later times the general I. has been entirely disused, though occasionally, in special circumstances, and to mark the horror of the church for some enormous crime, instances are still recorded in which a particular place or church has been visited with the local interdict.

INTERDIGITAL, a. *in'tēr-dij'ĭ-tāl* [*inter*, between, and *digital*]: in *anat.*, situated between the fingers; pertaining to the spaces between the fingers. IN'TERDIG'ITATE, v. *-ĭ-tāt*, to interlock like the fingers when the hands are clasped. IN'TERDIG'ITATING, imp. IN'TERDIG'ITATED, pp.

INTERESS, v. *in'tēr-ēs'* [see under INTEREST 2]: in *OE.*, to concern; to give a share in; to connect with; to ally. IN'TERESS'ING, imp. INTERESSED, pp. *in'tēr-ĕst*, allied; connected with. INTERESSE TERMINI, term in English law denoting the kind of interest which a lessee takes in land when the lease is executed.

INTEREST.

INTEREST, n. *in'tér-ĕst* [OF. *interest*, a right or title to, a payment for the use of money; F. *intérêt*, interest—from L. *interest*, it is profitable, it concerns—from *inter*, between; *esse*, to be: mid. L. *interessē*, usury]: regard to private profit or advantage; concern; share; price paid for the use or loan of money—the sum lent being called the *principal*, the interest for a year on \$1.00 the *rate*, and the principal and interest the *amount*: V. to give or have a share in. **SIMPLE INTEREST**, the interest reckoned and allowed upon the principal or money lent, paid year by year while the loan exists. **COMPOUND INTEREST**, the interest both of the sum lent and of the interest accumulating upon it year by year—thus, the amount for any one year becomes the principal for the next: see **INTEREST 2**. *Note*.—**INTEREST** appears to have been originally the penalty or indemnity exacted by law for damage done, whence by a change in the sense and its application, it became restricted to the accommodation-price for a loan of money: see Brachet.

INTEREST, v. *in'tér-ĕst* [formed from *interested*, the pp. of the OE. verb *interesse*, or *interest*, to interest: OF. *interessé*, interested or touched in: confusedly connected with L. *interessē*, to concern: Sp. *interesar*; It. *interessare*, to interest]: to excite emotion or concern in behalf of another; to concern; to affect; to engage, as the attention or affections; N. emotion or concern for another; influence over others: benefit; good. **IN'TERESTING**, imp.: **ADJ.** exciting the attention or curiosity. **IN'TERESTED**, pp.: **ADJ.** having the attention or curiosity excited in behalf of; concerned in any cause, event, or undertaking. **IN'TERESTINGLY**, ad. **IN'TERESTEDNESS**, n. **IN'TERESTINGNESS**, n. the condition or quality of being interesting. *Note*.—**INTEREST** from *interested* has been partially confused in its significations with **INTEREST 1**; and wholly influenced by it in the form which its spelling has assumed. *Interest* = *interested* by the well-known change of *ed* into *t*, and dropping an *s*—in which case *interest-ed* is really a reduplicated pp. See Skeat on these two entries.

IN'TEREST: payment due by the borrower of a sum of money to the lender for its use. The I. of \$1.00 for one year is called the rate *rate per cent.*; the money lent, the principal; and the sum of any principal and its I., the amount. The current or market rate of I. fluctuates widely, by reason, not, as is often supposed, of the extent of the supply of money, but of the variable rates of profit, as in Holland, where it has always been comparatively low, and in our own time in California, and Australia, where mercantile profits being in excess, the rate of I. is relatively high.

A strong prejudice against exacting I. existed in early times, arising from a mistaken view of some enactments of the Mosaic law; and as late as the reign of Edward VI., there was a prohibitory act passed for the alleged reason that 'the charging of I. was a vice most odious and detestable, and contrary to the word of God.' See Ex. xxii. 25; Lev. xxv. 39; Deut. xxiv. 19: the application being to

INTEREST.

money lent for the relief of distress, and not advanced to the borrower that he might make profit on it. Calvin, the famous reformer, was one of the first to expose the error and impolicy of this view, though a series of enactments, known as the Usury Laws, to some extent perpetuated it, by an attempted restriction of the maximum rate to be paid. In England, this rate was fixed by act 21 James I. at 8 per cent. During the Commonwealth, it was reduced to 6 per cent.; and by the act 12 Anne, c. 16, to 5 per cent. at which rate it stood till 1839, when the law was repealed. In Scotland, any charge for I. was prohibited before the Reformation. In 1587, the rate was fixed by law at 10 per cent.; in 1633, at 8 per cent.; in 1661, at 6 per cent.; and by the act of Anne, as above noted, at 5 per cent. It is now admitted that the operation of such laws tended only to raise the real rate of I., by driving men in distress to adopt extravagant methods of raising money—the bonuses thus paid being really and in effect an addition to the nominal interest.

I. is computed on either of two principles: I. simple I., where, should the interest not be paid as due, no I. is charged on the arrears. Although this mode of reckoning has little to recommend it in reason, it is adopted in many transactions, and receives the sanction of the law. The computation of simple I. is easy, it being necessary only to calculate the product of the principal, the rate per cent., and the period in years and fractions of a year, the result, divided by 100, giving the sum required. Thus, wanted the I. of \$1781.67 for $3\frac{1}{2}$ years at 4 per cent.

$$1781.67 \times 3\frac{1}{2} \times 4 \div 100 = \$249.43.$$

2. Compound I. is the charge made where—the interest not being paid when due—it is added to the principal, forming the amount upon which the subsequent year's I. is computed. The rules for most readily making computations by compound I. can be effectively expressed only algebraically, and we annex a few of the elementary formulæ.

1. Since \$1.00, increased by its I. r , at the end of one year becomes $\$1.00 + r$, this amount at the end of the second year becomes $(1 + r)^2$, and generally at the end of the n^{th} year $(1 + r)^n$. Example: To find the amount of \$1.00 improved at 5 per cent. for six years. r . the I. for \$1.00. is .05, and $n = 6$; therefore $(1.05)^6 = \$1.34$. 2. Since \$1.00 becomes in one year $1 + r$, it is found by ordinary proportion that the fraction of \$1.00, which will amount to \$1.00 in a year is $(1 + r)^{-1}$ (i.e., $\frac{1}{1 + r}$) = v ; and reasoning as above, the sum which will amount to \$1.00 n years hence is $(1 + r)^{-n} = v^n$. 3. The amount of \$1.00 in n years being $(1 + r)^n$, it will be seen that the excess of this sum over the original \$1.00 invested, or $(1 + r)^n - 1$, is the amount of an annual increment or 'annuity' of \$ r for the period, and from this by proportion, is deduced

INTEREST.

the formula for the amount of an annuity of \$1.00 for the same time, being

$$\frac{1}{r} (1 + r)^n - 1.$$

4. Reasoning as in (3), the present value of an annuity certain of \$1.00 for n years, or the sum which, improved at I ., will meet the annuity is

$$\frac{1}{r} \left[1 - \frac{1}{(1 + r)^n} \right] = \frac{1 - v^n}{r}$$

Tables for the four classes of values above described, based on various rates of I ., are given in most works on annuities. Those by Mr. Rance are computed for each quarter per cent. from $\frac{1}{4}$ to 10 per cent. It may be useful to note two results that can be easily deduced from a table of the present values of annuities (4). 1. The annuity which \$1.00 will purchase for any number of years is the reciprocal of the corresponding value in such a table. Example: A person borrows \$100, to be repaid by annuity in 15 years, with I ., at 5 per cent.; required the annuity? The present value of an annuity of \$1.00 per annum for that period, at the rate stated, is \$10.38, and $100 \times 10.38^{-1} = \9.6339 . 2. To find the annuity which in a given period will amount to \$1.00—subtract from the annuity that \$1.00 will purchase, ascertained as above, r , the I . of \$1.00 for a year. Example: The annuity which, paid for 15 years, will amount to \$1.00, taking I . at 5 per cent, is

Value of annuity which \$1.00 will purchase	}	\$.096339
as last found,		
Subtract r , at 5 per cent.,		.050000

Annuity required, . . . \$0.046339

\$4.6339 will amount in 15 years to \$100.00.

INTEREST IN LAW.—In England and Ireland when a debt has been for some time due, there is no obligation imposed on the debtor by the common law to pay any I . whatever, though the sum has been fixed and often demanded. The creditor can always sue for his debt, which is his proper remedy, but he derives no benefit from giving time to his debtor. Therefore, if I . is to be paid, this must be, as a general rule, by virtue of express agreement. Nevertheless, this rule has always had three or four exceptions, e.g., at the discretion of a jury in an action to recover the amount of a bill of exchange or promissory note; also in the case of money due on award by an arbitrator, I . being due from the day when the award was made; also in the case of a bond for money, I . being added from the day on which it ought to have been paid; also if a surety had to pay money for his principal, he could recover it with interest. In all other cases, if there was no express agreement about I ., and no usage to require I . in a course of dealing between the parties or affecting a particular trade, none could be claimed. A recent statute has somewhat amended the above defect of the common law, but

INTEREST.

INTEREST LAWS IN THE UNITED STATES 1891.

STATES AND TERR.	INTEREST LAWS.		GRACE.	STATUTES OF LIMITATIONS.			USURY PENALTIES.
	Legal	Con- tract.		Jdgts. Yrs.	Nts. Yrs.	Op'n acc. Yrs.	
	pr. ct.	pr. ct.					
Ala.....	8	8	Grace.	20	6	3	Forfeit. of entire int.
Ariz....	7	any	None.	5	3	2	None.
Ark....	6	10	Grace.	10	5	3	Forfeit. of prin. and int.
Cal.....	7	any	None.	5	4	2	None.
Colo....	8	any	Grace.	6	6	6	None.
Conn...	8	*6	"	—	6	6	None.
Del.....	6	6	"	20	6	3	Forfeit. of principal.
D. C....	6	10	"	12	3	3	Forfeit. of entire int.
Fla.....	8	any	"	20	5	2	None.
Ga.	7	8	"	7	7	4	Forfeit. of excess.
Ida	10	18	"	6	6	3	Forfeit. 3 times ex- cess int.
Ill	6	8	"	7	10	5	Forfeit. of entire int.
Ind	6	8	"	10	10	6	Forfeit. of excess.
Ia.....	8	8	"	10	10	5	Forfeit 10 per cent. per year on amount
Kan....	6	10	"	5	5	2	Forfeit. of excess.
Ky.....	5	8	"	15	15	5	Forfeit. of excess.
La.	6	8	"	10	5	3	Forfeit. of entire int.
Me.....	6	any	"	20	6	6	None.
Md.....	6	6	"	12	3	3	Forfeit of excess.
Mass..	6	any	"	20	6	6	None.
Mich...	7	10	"	6	6	6	Forfeit. of excess.
Minn...	7	10	"	10	6	6	Forfeit. of excess.
Miss....	6	10	"	7	6	3	Forfeit. of entire int.
Mo.....	6	10	"	20	10	5	Forfeit. of entire int.
Mont...	10	any	None.	8	6	2	None.
Neb. . .	7	10	Grace.	5	5	4	Forfeit. of int. and cost.
Nev....	7	any	"	6	6	4	None.
N. H....	6	6	"	20	6	6	Forfeit. 3 times ex- cess.
N. J....	6	6	"	20	6	6	Forfeit. of entire int.
N. M....	6	12	None.	15	6	4	None.
N. Y....	6	+6	"	20	6	6	Forfeit. of prin. and int.
N. C....	6	8	Grace.	10	3	3	Forfeit. of entire int.
N. D....	7	10	"	20	6	6	Forfeit of contract.
O.....	6	8	"	5	15	6	Forfeit. of excess.
Or.....	8	10	"	10	6	1	Forfeit of prin. and int.
Penn...	6	6	"	5	6	6	Forfeit of excess.
R. I....	6	any	"	20	6	6	None.
S. C....	7	8	"	10	6	6	Forfeit. of double the excess.
S. D....	7	10	"	20	6	6	Forfeit of contract.
Tenn...	6	6	"	10	6	6	Forfeit. of excess.
Tex....	8	12	"	10	4	2	Forfeit. of entire int.
Utah...	10	any	None.	5	4	2	None.
Vt.....	6	6	Grace.	6	6	6	Forfeit. of excess.
Va.....	6	8	"	10	5	2	Forfeit. of excess.
Wash...	10	any	—	6	6	3	None.
W. Va..	6	6	Grace.	10	10	5	Forfeit. of excess.
Wis....	7	10	"	20	6	6	Forfeit. of entire int.
Wyo....	12	any	"	5	5	4	None.

* No usury, but over 6 per cent. cannot be collected by law.

† A recent law legalizes any rate on call loans of \$5,000 or upward, on collateral security.

INTERFACIAL—INTERFERENCE.

without essential change. As regards compound I., it is *a fortiori* not claimable I. in any case, except where it has been expressly stipulated for, or where there is in some particular trade a definite custom to pay I., which custom must be proved. Pawnbrokers are allowed to charge I. not exceeding a fixed sum: see PAWNBROKING.—In Scotland, the law has always been much more liberal in allowing I. to be claimed on outstanding debts.

INTERFACIAL, a. *in'tēr-fā'shal* [L. *inter*, between; *fāciēs*, the face]: included between two faces or planes. **INTERFACE**, n. *in'tēr-fās*, the surface between two faces or planes in contact.

INTERFASCICULAR, a. *in'tēr-fā-sik'ū-lēr* [L. *inter*, between; *fascic'ulus*, a small bundle]: applied to the cambium in decotyledonous plants occurring between the fibro-vascular bundles.

INTERFERE, v. *in'tēr-fēr'* [OF. *entreferir*, to strike or hit one another—from *entre*, between; *ferir*, to strike—from L. *inter*, between; *ferirē*, to strike]: to interpose; to intermeddle; to take part in the business or concerns of others; to be in opposition; to hack or strike one leg against another as a horse. **IN'TERFER'ING**, imp. meddling; clashing. **IN'TERFERED'**, pp. *fēr'd'*. **IN'TERFERENCE**, n. *fēr'ens*, the intermeddling in the affairs of others; interposition: in *optics*, see below.—**SYN.** of 'interfere': to interpose; intermeddle, intercede; clash; contradict; oppose.

INTERFERENCE, in Optics: the effect which rays of light, after being bent or diffracted, produce on each other. If the rays meet after diffraction, their light, when allowed to fall on a surface, will be divided into bars or stripes, alternately light and dark (see **DIFFRACTION**). This phenomenon has been made the touchstone of the two rival theories of light, the *undulatory* and the *emission*. According to the former, it is thus explained: if two luminous waves simultaneously impel a molecule of ether, its motion will be the resultant of the original impulses; and if the two motions (as in the case of diffraction) be nearly in the same direction, the resultant will be nearly their sum; if opposite, their difference. Thus, when a particle has begun to undulate from the action of a luminous wave, and if, while in motion, another wave impinge upon it, the result will be increase of light, if the motion of the second wave conspire with that of the first; but a decrease, if they oppose each other; and total darkness, if, while opposing, they are equal in velocity. Let d be the distance corresponding to a complete period of vibration; then, if the second wave impinge upon the molecule after it has accomplished one or more whole vibrations corresponding to the distances d , $2d$, $3d$, etc., and has returned to its original position, the two waves will evidently conspire together, and produce more violent motion: but if it impinge on the molecule, when the latter has accomplished only half a vibration, corresponding to distances $\frac{1}{2}d$, $\frac{3}{2}d$, $\frac{5}{2}d$, etc., then the wave will oppose the particle's return to its original position; thus producing diminution of motion; or, if equal,

INTERFLUENT—INTERIM.

rest. In the former case, the intensity of light is increased; in the latter, diminished; and if the undulations are of equal velocity, the light is doubled in the first case, and destroyed in the second. The emission theory totally fails to explain interference. In light of different colors, the value of *d* differs for each color, being least for violet, and greatest for red light. The principle of interference accounts in the most satisfactory way for the colors of thin plates, the fringes that accompany shadows, etc.; and its explanation forms the most decisive reason yet known for adopting the *undulatory* in preference to the *emission* theory of light. See LIGHT: UNDULATORY THEORY OF LIGHT.

INTERFLUENT, a. *in-tér-fló-ěnt* [L. *interflüens*, or *interflüen'tem*, flowing between—from *inter*, between; *flüō*, I flow]: flowing between.

INTERFOLIATE, v. *in-tér-fó-lĩ-āt* [L. *inter*, between; *fólium*, a leaf]: to interleave; to interweave. IN'TERFO'LIATING, imp. IN'TERFO'LIATED, pp.: ADJ. interleaved; interwoven. IN'TERFO'LIAR, a. -lĩ-ěr, situated between two opposite leaves.

INTERFRETTED, a.: in *her.*, interlaced.

INTERFUSE, v. *in-tér-füz'* [L. *interfūsus*, poured or spread between—from *inter*, between; *fūsus*, poured]: to pour or spread between. IN'TERFU'SING, imp. IN'TERFUSED', pp. -füz'd': ADJ. poured or spread between. IN'TERFU'SION, n. -zhün, the act of interfusing.

INTERGANGLIONIC, a. *in-tér-gäng'glĩ-ön'ik* [*inter*, between, and *ganglionic*]: lying or extending between ganglions.

INTERGLACIAL, a. *in-tér-glā'shal*, a.: in *geol.*, occurring between two periods of glacial action.

INTERHEMAL, a. *in-tér-hě'mäl* [L. *inter*, between, and *hæmal*]: in *anat.*, between the hemal processes or spines.

INTERIM, n. *in-tér-ĩm* [L. *interim*, in the meantime—from *inter*, between; *ĩm*, old accus. of *is*, this, that]: time between or intervening; an interval: AD. in the meanwhile. —*Interim*, in the history of the Reformation, was the name of several compromises forced on the German Protestants by edicts of Charles V., especially that of 1548, regulating religious and ecclesiastical matters 'in the meantime,' till they could be decided by a general council. The first is the *Ratisbon Interim*, result of the deliberations of a commission appointed during the diet of Ratisbon (Regensburg) 1541, of which Eck, Pflug, and Gropper were the Rom. Cath., and Melanchthon, Bucer, and Pistorius the Prot. members. On the greater number of doctrinal points, the commission found it possible to agree on terms which might be deemed consistent with the views of both parties; but as to the sacraments and the power of the church, the differences were irreconcilable. By the Protestants in general, the whole movement was looked on as a scheme to entrap them into a formal return to the Church of Rome. At the next diet, Augsburg 1548, a new interim was by the emperor's command prepared by Pflug, Helding

INTERIOR—INTERJOIST.

(Sidonius), and Agricola—called the *Augsburg Interim*. In it the use of the cup by the laity, the marriage of priests, and some other minor things, were conceded to the Protestants; but it met with very general opposition, particularly in n. Germany, and was revoked 1552. By the exertions of the Elector Maurice of Saxony, a third interim, the *Leipsic Interim*, was adopted at the diet of Leipsic, 1548, Dec. 22, which guarded the Prot. creed. but admitted great part of the Rom. Cath. ceremonial, and recognized the power of popes and bishops, when that power was not abused. But the offense given to the more zealous Protestants by this interim, which Melanchthon, Bugenhagen, and Major supported, led to division in the Prot. Church.

INTERIOR, a. *in-tē'ri-ér* [L. *intērior*, further in; F. *intérieur*]: internal; inner; remote from the coast or frontier: N. the inside; that which is within; the inland part of a country. **INTERIORLY**, ad. -*lī*. **INTERIOR SLOPE**, in *fort.*, the inner slope joining the crest to the banquette. **INTERIOR-ANGLES**, in *geom.*, the angles formed within any figure by two adjacent sides. **INTERIOR-PLANETS**, in *astron.*, same as **INFERIOR-PLANETS**.—**SYN.** of 'interior a.': inner; inside; internal; inland.

INTERIOR, DEPARTMENT OF THE: branch of the U. S. govt. having charge of the supervision of public business relating to patents, pensions and bounty-lands, public lands and mines, Indians, education, railroads, public surveys, the census, custody and distribution of public documents, certain hospitals and charitable institutions in the D. C., and various matters relating to the U. S. territories. The officers are sec., first asst. sec., asst. sec., chief clerk, commissioners of patents, Indian affairs, pensions, general land office, education, railroads, and labor, director of the U. S. geological survey, and supt. of the U. S. census. See **MINISTRY**.

INTERJACENT, a. *in'tér-jā'sént* [L. *interjācens*, or *interjācen'tem*, lying between—from *inter*, between; *jācens*, lying]: lying between; intervening. **INTERJACENCY**, n. -*sén-sī*, the act or state of lying between.

INTERJECT, v. *in'tér-jěkt'* [L. *interjec'tus*, cast or thrown between—from *inter*, between; *jāciō*, I cast or throw]: to throw in or between; to come between. **INTERJECTING**, imp. **INTERJECTED**, pp. **INTERJECTION**, n. -*jěk'shŭn* [F.—L.]: a word thrown in to express some sudden emotion or passion; an exclamation; e.g., ah! alas! hurrah! pooh! They are scarcely considered parts of speech, and never form grammatical parts of a sentence; and seem more akin to the sounds uttered by the lower animals than to articulate language. **INTERJECTIONAL**, a. -*shŭn-āl*, thrown in between or among other words or phrases.

INTERJOIN, v. *in'tér-joyn'* [*inter*, between, and *join*]: in *OE.*, to join mutually; to intermarry.

INTERJOIST, n.: in *arch.* space or interval between two joists.

INTERLACE—INTERLOBULAR.

INTERLACE, v. *in'tér-lās'* [F. *entrelacer*; OF. *enterlasser*, to interlace—from *entre*, between; *lasser*, or *lacer*, to lace]: to lace together; to insert one thing so as to plait or twine with another; to intermix. **IN'TERLAC'ING**, imp. **IN'TERLACED'**, pp. *-lāst'*. **IN'TERLACE'MENT**, n. insertion within.

INTERLA'KEN, or **INTERLACHEN**, *in-tér-lách'én* ['between the lakes']: village of Switzerland, delightfully situated on the right bank of the Aare, in a plain between Lakes Thun and Brienz, 26 m. s.e. of the town of Berne. Along the *Walnut Avenue* or *Highway* (Hoheweg) between the lakes, there is an almost uninterrupted line of hotels or *pensions*, and of shops. I. occupies the site of religious houses founded 1130, abolished 1528. Within a few miles of the village are many of the most wonderful sights that the country affords. Ten miles s. is the Staubbach (meaning the 'dust-beck or fall'), with its perpetual iris; a few miles farther s., and in full view from the village, are the magnificent Jungfrau and several other remarkable peaks of the Bernese Alps. The visitors, 150,000 to 200,000 annually, are the chief source of income to the place. Pop. of I., Aarmühle, and the adjacent Unterseen about 4,080.

INTERLARD, v. *in'tér-lārd'* [F. *entrelarder*, to interlard—from L. *inter*, between; *lardum*, the fat of bacon]: *literally*, to insert pieces of fat among lean; 'to diversify by mixture; to insert, generally in a depreciatory sense. **IN'TERLARD'ING**, imp. **IN'TERLARD'ED**, pp.

INTERLEAVE, v. *in'tér-lēv'* [*inter*, between, and *leave*]: to insert blank leaves in a book between other leaves. **IN'TERLEAV'ING**, imp. **IN'TERLEAVED'**, pp. *-lēvd'*: **ADJ.** having blank leaves inserted between.

INTERLINE, v. *in'tér-līn'* [F. *entreligner*—from mid. L. *interlinēārē*—from L. *inter*, between, and *linēā*, a line]: to write between lines; to write in alternate lines. **IN'TERLIN'ING**, imp.: **N.** the corrections or alterations written between the lines, as of a MS. **IN'TERLINED**, pp. *-līnd'*: **ADJ.** having lines written between lines. **IN'TERLIN'EAR**, a. *-līn'-ē-ēr*, or **IN'TERLIN'EARY**, a. *-ēr-ē*, inserted between the lines formerly written or printed. **IN'TERLINEA'TION**, n. *-ā'shūn*, the act of inserting words or lines between lines; correction by writing between the lines; a passage or words written between lines: in a *deed*, insertion or correction either between the lines or on the margin. Interlineations in a deed are not fatal to its legality, provided only it is proved that they were made before executing the deed. It is usual to put the parties' initials opposite the place where the interlineations occur, in proof of this, or at least by way of memorandum. In affidavits and other formal documents also the initials should be put at the places interlined.

INTERLINK, v. *in'tér-līngk'* [*inter*, between, and *link*]: to connect by uniting links as in a chain.

INTERLOBULAR, a. *in'tér-lōb' ū-lēr* [L. *inter*, between; *lobulus*, a little lobe]: situated between the lobules of organs.

INTERLOCUTION—INTERMARRY.

INTERLOCUTION, n. *in'tér-lō-kū'shŭn* [F. *interlocution*—from L. *interlocūtīōnem*, a speaking between—from *inter*, between; *locūtus*, spoken]: a speaking between or among different persons; a dialogue. **INTERLOCUTOR**, n. *in'tér-lōk'ū-tér* [F. *interlocuteur*—from mid L. *interloc'utor*]: one who speaks in dialogue; a speaker in a drama; in *Scotch courts of law*, the judgment or order of the court, or of a judge, which may not be final. **IN'TERLOC'UTORY**, a. *-tér-ī*, consisting of dialogue; preparatory: in *law*, not final or definite, but merely a step in a suit or action.

INTERLOPE, v. *in'tér-lōp'* [L. *inter*, between; Dut. *loopen*, to run: Dut. *enterloper*, a contraband trader: F. *interlope*, smuggling]: to run between; to thrust one's self into any business or matter in which one has no just right; to intrude. **IN'TERLO'PING**, imp. **IN'TERLOPED**, pp. *-lōpt*. **IN'TERLO'PER**, n. *literally*, a leaper or runner between; one who runs into a business or matter in which he has no just right; an intruder. *Note*.—**INTERLOPE** as a French word is said to have come originally from Dut. through Eng.; and **INTERLOPER** was formerly applied to those trading ships which infringed the exclusive rights of the East India Company's ships.

INTERLUDE, n. *in'tér-lōd* [L. *interlūdĕrĕ*, to play among—from *inter*, between; *lūdĕrĕ*, to play; *lūdus*, a play]: a light entertainment given between the parts of another, usually between the play and the afterpiece; a particular form of early English dramas occupying a place intermediate between the miracle plays and moral plays: in *Church Service*, short melodious phrase played by the organist (generally extempore) between the stanzas of a psalm-tune. In the German Prot. Church, the interlude (or *zwischenenspiel*) is generally played between each line of the stanza, to give the congregation a pause for breath. To accompany the *chorale* of the Lutheran Church with scientific and appropriate interludes, is reckoned in Germany the chief test of a good organist. **IN'TERLU'DED**, a. inserted in the manner of an interlude.

INTERLUNAR, a. *in'tér-lō'nĕr*, or **IN'TERLU'NARY**, a. *-nĕr-ī* [L. *interlūnĭum*, the change of the moon—from *inter*; *lūnā*, the moon]: belonging to the time between the old and new moon when it is invisible.

INTERMARRY, v. *in'tér-mār'rĭ* [*inter*, between, and *marry*]: to marry persons of a family, tribe, or nation with some of another. **IN'TERMAR'RYING**, imp. **IN'TERMAR'RIED**, pp. *-rĭd*. **INTERMARRIAGE**, n. *in'tér-mār'ĭj*, reciprocal marriage between families, tribes, or nations. Intermarriage of near relatives has been generally believed to entail degeneration upon the offspring, and has been condemned and prohibited. The physical deformity and mental debasement of the Cagots of the Pyrenees, of the Marrons of Auvergne, of the Sarrasins of Dauphiné, of the Cretins of the Alps. have been attributed to the consanguineous alliances which seemed unavoidable among these peoples. More recently, the same opinion has been supported by the history of deaf-mutism and of idiocy. Of

INTERMAXILLARY—INTERMEDE.

235 deaf and dumb children whose parentage could be traced, 70, or nearly 30 per cent., were the offspring of the intermarriage of blood relations. But in opposition to, and apparently destructive of such an hypothesis, may be adduced the unimpaired condition and symmetry of the Jews, of the small Mohammedan communities in India, of the isolated tribes in N. America, among whom the intermarriage of near relatives is compulsory. Moreover this opinion does not hold in the analogous cases among the inferior animals, as the Arabs can trace the pedigree of their most valuable horses to the time of Mohammed, while they avoid all crossing; the stud-books in Britain record the ascendants of racers for 200 years, and show the perpetuation of the qualities of strength, and weight, and fleetness by propagation within the endowed family—both Eclipse and Childers being descended from a horse the offspring of a parent and foal; and the descendants, again, of these horses, which still maintain the highest estimation, afford many instances of very close breeding; and lastly, the Durham ox and the Ditchely sheep were the result and triumph of breeding ‘in and in.’ The present state of the controversy, as it has been recently conducted in France, may be summed up in the proposition, that consanguineous alliances are not necessarily hurtful to the offspring, provided the parents be healthy and robust; but the observations of Devay and Bemiss in America show that such generalizations should be received with some doubt. Even were it established that mental disease generally followed such union, the transmission might depend rather upon the increased certainty of reproducing hereditary tendencies, than upon the violation of any physiological law.—Steinau, *Essay on Hereditary Diseases and Intermarriage*; Devay, *Du Danger des Mariages Consanguins* (1862); Boudin, *Dangers des Unions Consanguines*, etc.; *Annales d'Hygiène Publique* (1862); Ribot's *Hérédité* (1874); etc.

INTERMAXILLARY, a. *in'tér-mäks-ül'lér-ä* [*inter*, between, and *maxillary*]: situated between the maxillaries or jawbones.

INTERMEDDLE, v. *in'tér-měd'l* [OF. *entremedler*, to intermingle, to intermix—from *entre*, between, among; *medler*, to meddle: *inter*, between, and Eng. *meddle*]: to interfere in the affairs of others officiously or without right. **IN'TERMED'DLING**, imp. *-măd'ling*. **IN'TERMED'DLED**, pp. *-măd'ld*. **IN'TERMED'DLER**, n. *-lér*, one who.—**SYN.** of ‘intermeddle’: to interpose; interfere; intercede; mediate; intervene.

INTERMEDE, n. *in'tér-měd'* [F. *intermède*, an interlude—from L. *intermēdiūs*—from L. *inter*, between; *mēdiūs*, middle]: a musical interlude, generally of a burlesque kind. **IN'TERME'DIAL**, a. *-mē'di-ăl*, lying between or going between. **IN'TERME'DIATE**, a. *-mē'di-ăt* [F. *intermédiate*, that is between two]: lying or being in the middle between two extremes; being between two points; intervening. **IN'TERME'DIATELY**, ad. *-lī*. **IN'TERME'DIA'TION**, n. *-i-ă'shún*, intervention. **IN'TERME'DIUM**, n. *-mē'di-ŭm*, an intervening

INTERMEDIATE—INTERMITTENT FEVER:

agent. INTERMEDIARY, a. *in'tēr-mē'dī-ēr-ī*, intervening: N. an intervening agent; a go-between. INTERMEDIATE HARMONIES, in *music*, harmonies introduced between extreme non-related keys, while modulating from the one key to the other, which harmonies prepare the ear to receive the new key. INTERMEDIATE STATE, the condition of the soul between death and the resurrection: see ESCHATOLOGY, etc. INTERMEDIATE TERMS, the terms of a series between the first and the last terms, or extremes.

INTERMEDIATE, INTERMEDIARY, etc.: see under INTERMEDE.

INTERMENT, n. *in-tēr'mēnt* [from INTER 2, which see]: the act of covering with earth; burial; sepulture; inhumation.

INTERMETACARPAL, a. *in-tēr-mēt-a-kār'pal* [prefix, *inter*; Gr. *meta*, beyond; *karpōs*, wrist]: in *anat.*, between the metacarpal bones of the hand, as *intermetacarpal* articulations.

INTERMEZZO, *in-tēr-mēt-zō*: short dramatic comic scene, with singing, peculiar to the Italian stage; introduced between the acts of an opera or play.

INTERMINABLE, a. *in-tēr'mī-nā-bl* [F. *interminable*—from mid. L. *interminābilis*—from L. *interminātus*, without limits—from *in*, not; *terminus*, a boundary line]: boundless; endless; admitting no limit. INTERMINABLY, ad. *-blī*. INTERMINABLENESS, n. *-bl-nēs*. INTERMINATE, a. *-mī-nāt*, endless; unlimited.—SYN. of 'interminate': unbounded; unlimited; limitless; illimitable; immeasurable; infinite.

INTERMINGLE, v. *in'tēr-mīng'gl* [*inter*, between, and *mingle*]: to mix together; to put some things among others confusedly; to be mixed. INTERMIN'GLING, imp. INTERMIN'GLED, pp. *-gld*: ADJ. intermixed or mingled together confusedly.

INTERMISSION, n. *in'tēr-mīsh'ūn* [F. *intermission*—from L. *intermissiōnem*, a breaking off, an interruption—from *inter*, between; *missus*, sent]: cessation for a time; pause; temporary interruption. INTERMISSIVE, a. *-mīs-siv*, not continual coming by fits.—SYN. of 'intermission': interruption; cessation; stop; interval; rest; disuse; abatement.

INTERMIT, v. *in'tēr-mīt* [L. *intermit'tērē*, to leave off, to give over for a time—from *inter*, between; *mitto*, I send, I make to go. Sp. *intermitir*, to discontinue]: to cause to cease for a time; to interrupt; to cease for a time; to disappear at intervals. INTERMITTING, imp.: ADJ. causing to cease for a time; pausing. INTERMITTED, pp.: ADJ. caused to cease for a time. INTERMITTINGLY, ad. *-lī*. INTERMITTENT, a. [F]: ceasing at intervals: N. a disease, as fever or the ague, whose symptoms cease at certain intervals. INTERMITTENT SPRINGS, springs which cease flowing for a time at certain intervals.

INTERMITTENT FEVER: see AGUE: DUMB AGUE.

INTERMIX—INTERNATIONAL.

INTERMIX, v. *in'tér-mĩks'* [L. *intermixtus*, mixed or mingled among—from *inter*, between; *mixtus*, mixed, mingled]: to mingle some things with others; to be mingled together. **IN'TERMIX'ING**, imp. **IN TERMIXED'**, pp. *-mĩkst'*. **IN TERMIX'TURE**, n. *-mĩks'tūr*, or *-chúr*, a mass of ingredients mingled together.

INTERMUNDANE, a. *in'tér-mũn'dān* [L. *intermun'diũ*, spaces between the worlds—from *inter*, between; *mundus*, the world]: being between worlds, or between orb and orb.

INTERMURAL, a. *in'tér-mũ'rāl* [L. *intermũrālĩs*, that is between two walls—from *inter*, between; *mũrus*, a wall]: lying between walls; within a city.

INTERMUSCULAR, a. *in'tér-mũs'kũ-lèr* [*inter*, between, and *muscular*]: between muscles.

INTERN, v. *in-tèrn'* [F. *interne*, internal—from L. *internus*, interior, inward]: to put for safe keeping in the interior of a place or country; to imprison: **ADJ.** in *OE.*, inland; not foreign; domestic. **INTERN'ING**, imp. **INTER'NED'**, pp. *-tèrnd'*, placed for safe keeping in the interior; imprisoned.

INTERNAL, a. *in-tér'nāl* [F. *interne*, internal—from L. *internus*, interior, inward: It. *interno*]: interior; the opposite of external; pertaining to the heart or centre; domestic; not foreign. **INTERNAL'LY**, ad. *-lĩ*.—**SYN.** of 'internal': inner; inward; inland; intrinsic; real.

INTERNAL REVENUE: see **REVENUE, PUBLIC: EXCISE: TAX: ETC.**

INTERNATIONAL, a. *in'tér-nāsh'ũn-āl* [*inter*, between, and *national*; L. *natiōnēs*, nations]: mutual, as between nations; regulating the mutual intercourse between different nations, as international law. **IN'TERNA'TIONALLY**, ad. *-lĩ*.

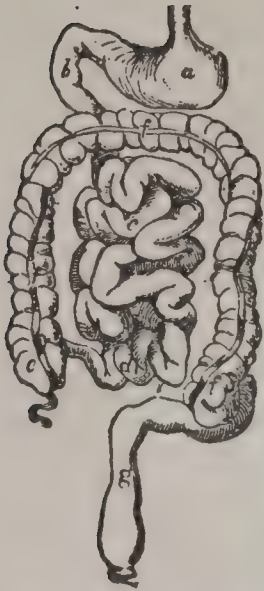
INTERNA'TIONAL, THE, or INTERNATIONAL WORKINGMEN'S ASSOCIATION; an organization which grew out of the visit of some French workmen to the exhibition at London, 1862, and was formed there, 1864, at a large gathering of working men from nearly every country in Europe. The constitution prepared by Dr. Karl Marx (q.v.), and a committee nominated at this meeting and formally approved at the first congress at Geneva, 1866, first made known to the world the wide aims of the organization. In this startling manifesto it was declared that the emancipation of the working classes was not a local and a national, but a social question, as all the mental and material degradation under which they suffer is due to the economical subjection of the man of labor to the monopolizer of the means of labor, or in other words, the sources of life. It was hoped that the organization would be a point of union for the workingmen of the world, the largest section of mankind with identical interests, and that its machinery would give simultaneousness and uniformity to their action. Proof was soon given of its capabilities in the complete success gained in the beginning of 1867 by the bronze workers in Paris in their struggle with their employers; later in the same year in the great strike of the

INTERNATIONAL COPYRIGHT.

London tailors; and in that of the building trade in Geneva in the following year. Further congresses at Lausanne (1867), Brussels (1868), and Basel (1869), revealed a rapid change in its tendencies, and it soon became more and more identified with the most advanced socialistic and revolutionary principles, finally declaring its opposition to the principle of private property. The outbreak of the Franco-German war prevented the congress of 1870 from being held as proposed, in Paris, but gave the society an opportunity of showing itself to the world in a more favorable light as the champion of humanity against the brutality of war. The I. was not connected with the Commune of Paris, but the General Council of London officially indorsed the actions of the Commune, and this may be said to have been the first point of its decline. Jealousies began within the society, which culminated at the congress at the Hague, 1872, in an open rupture between the moderate party headed by Marx, and the extreme section led by the Russian nihilist Bakunin. Marx carried the headquarters of his party to New York, but his efforts failed to prolong its life beyond its last congress at Geneva, 1874. The extreme party lingered until 1879, when disunion had made it no longer dangerous to established authority, and it had forfeited the confidence of all reasonable revolutionists, by lending its aid to the insane risings in Spain, 1873, and by committing its faith to a gospel of universal destruction. No society now existing can make any claim to the name or the prestige of the International. See **NIHILISM: COMMUNISM: SOCIALISM.** The I. was more important for the possibilities that it revealed to the world than for any actual results achieved, and it is certain that at no period of its history did it correspond either in number of adherents, or in amount of funds at the disposal of its executive, to the alarmist ideas of the governments and the great capitalists of Europe.

INTERNATIONAL AFRICAN ASSOCIATION:
see **AFRICA.**

INTERNATIONAL COPYRIGHT: see **COPYRIGHT.**



Human Stomach and Intestinal Tube.

a, Stomach; *b* to *d*, Small Intestine; *b*, Duodenum; *c*, Jejunum with Convolutions; *d*, Ileum, with do.; *e* to *g*, Large Intestine; *e*, Cæcum; *ff*, Colon; *g*, Rectum.



a, Nodes or joints; *b*, Internodes.



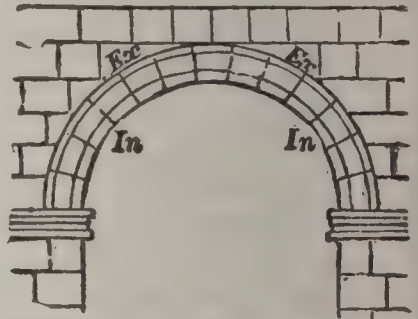
Hemlock Plant.
a, Involucre; *b*, Involucels.



Intrapetiolar.



Eagle displayed wings Inverted.

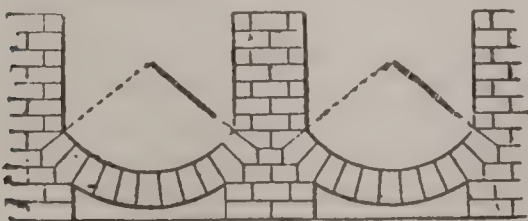


In, Intrados; *Ex*, Extrados.

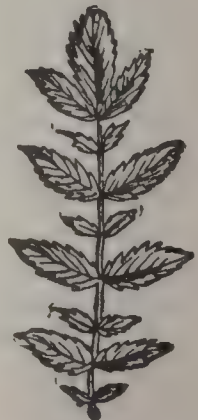


Trenchment as usually Constructed.

A B C, Banquette; *C D E F*, Parapet; *K G H I*, Ditch; *K G*, Scarp; *H I*, Counterscarp.



Inverted Arches.



Interruptedly Pinnate.

INTERNATIONAL LAW.

INTERNATIONAL LAW: body of rules established in custom or by treaty, by which the intercourse between civilized nations is governed. It is divided into public I. L. and private I. L. 1. *Public International Law*, or the law of nations, consists of those rules which independent nations agree in considering just and fair in regulating their dealings with each other in times of peace and of war. The mode in which they arrive at this common understanding of what is just and fair, is by comparing the opinions of text-writers who profess to set forth and collect the general opinion of civilized nations; for all these writers appeal ultimately to the principles of natural reason and morality and common sense, as the test of what they profess to be the proper rule. Treaties of peace, alliance, and commerce also define and modify the existing I. L. as between the contracting parties. The decisions of prize-courts, which profess to proceed on principles of natural justice, of universal application, also are declarations of this I. L. The leading doctrines thus adopted are as follows: A sovereign state is one which governs itself independently of foreign powers. Dependent or confederated states must hold their relations with other states only through the nation on which they depend or in which they form a part. All independent states are held to possess equal duties and rights, whatever may be their form of government or their size and importance. In the event of a civil war in one nation, other nations may remain indifferent spectators, and treat the ancient government as sovereign, and the government *de facto* as entitled to the rights of war against its enemy. If the foreign state profess neutrality, it is bound to allow impartially to both belligerent parties the free exercise of those rights which war gives to public enemies against each other, such as the right of blockade, and of capturing contraband and enemy's property. Where a colony or province asserts its independence, and has shown its ability to maintain this independence, the recognition of its sovereignty by other foreign states is a question of policy and prudence only; but until acknowledged, courts of justice and private individuals are bound to consider the ancient state of things as remaining unaltered. When a change occurs in the person of the sovereign, or in the internal constitution of a state, all treaties made by such state which were not personal to the former sovereign, continue to be binding on the succeeding sovereign.

All sovereign states are, in the eye of international law, on a footing of equality. Each state has the right to require the military service of its own people for purposes of self-defense, and to develop all its resources in the manner it thinks fit, so long as it does not interfere with the same equal rights of other nations. When, however, one state unduly aggrandizes itself, and augments its military and naval forces beyond what all the other states consider proportioned to its position, then those other states have some ground to interfere, at least by intimating a desire for information as to the reasons for such augmentation.

INTERNATIONAL LAW.

This, however, is considered a delicate business, and not to be attempted rashly; and it is difficult to define what is a just ground of interference. The mere acquisition of colonies and dependencies has never been considered adequate motive for such interference. According to Wheaton (*International Law*, 88, 6th ed.), interferences to preserve the balance of power have been generally confined to prevent a sovereign, already powerful, from incorporating conquered provinces into his territory, or increasing a dictatorial influence over the councils and conduct of other independent states. I. L. concerns itself only with states *de facto*. A dependent or federated state seeking to gain a national independence, cannot be aided by foreign states without creating a condition of war with the nation in which the state formed a part. The aversion to interference has no doubt, in modern times, become stronger; and it may be taken to be now almost an axiom, that no foreign state has any just ground of interfering in what is merely an internal revolution of a state, or a mode of readjusting its own constitution; in short, each state ought to be allowed to manage its own internal affairs, and to choose whatever form of government best suits the people, for the exercise of this right can, in general, nowise affect other states. Peculiar circumstances have however been held to warrant national declarations of policy involving prohibition of certain lines of action by other nations; e.g., Pres. Monroe's declaration that the United States would oppose any *extension* by the European powers of their system in any portion of this hemisphere, as dangerous to our peace and safety (see MONROE DOCTRINE). Likewise, when a strong nation outrages natural justice by great cruelty toward a weak nation, the right of interference by other states is claimed and has been exercised; e.g., when the Turks had committed great barbarities against the Greeks in the war for Greek independence, the allied fleets of England, France, and Russia, 1827, destroyed the Turkish fleet.

Each state has the natural right to make its own laws regulating the property and status of all the subjects within its territory. On the high seas, both the public and private vessels of every nation are subject to the jurisdiction of the state to which they belong. Offenses there committed against its own municipal laws are under jurisdiction of the state to which the vessels belong; but no right of visitation and search belongs to a nation in time of peace, though piracy and other offenses against the law of nations, being crimes not against any particular nation, but against all mankind, may be punished by any state in which the offenders can be found. The traffic in slaves is, however, not classed with piracy by the law of nations, though nations may declare it to be so as regards their own subjects; and they also enter into a compact as to that matter, as has been done by Great Britain with other nations. With regard to crimes and their punishment, though each state will punish all crimes by whomsoever committed, if committed within its own territory, and also all crimes

INTERNATIONAL LAW.

committed in its public and private vessels on the high seas, or in a foreign port; likewise all crimes, wherever committed, by one of its own subjects; yet it cannot arrest one of its own citizens if he is within the territory of another state; to do so would be an invasion of the municipal law of that state; hence it can only arrest its criminals in foreign states by the leave of such state, and such state is not bound to accede to such a request. Hence arises the expediency of different states entering into an extradition treaty, by which they bind themselves to give up to each other criminals who have committed certain specified offenses.

The domain of a sovereign state comprises all land and water within its boundaries—including harbors, bays, and straits inclosed by its territory; and the sea to the extent of a marine league from the shore. A ship owned by its citizens is not its property, but is private property under its rule and protection. In a foreign port, the vessel and its crew are amenable to the laws of that foreign country. Rivers separating two countries are common to both, and the boundary-line is usually held to follow the centre of the main channel.

There are certain usages or ceremonials of respect shown by one nation to another in certain circumstances, and these are founded on the theory of the equality of sovereign states. As regards the right of precedence among kings, emperors, and princes, there is nothing settled and binding, except, perhaps, that Rom. Cath. powers concede the precedency to the pope. But as regards minor matters, it is the settled courtesy for one nation to salute another by striking (lowering) the flag or the sails, or by firing a certain number of guns, on approaching a fleet or a ship of war, or entering a fortified port or harbor. Sometimes these ceremonials are regulated by express treaty, as, for example, as regards the maritime honors formerly exacted by Denmark from vessels passing the Sound and Belts at the entrance of the Baltic Sea.—Certain classes of persons are generally and to a certain extent, held exempt from local jurisdiction in a foreign land; e.g., sovereigns passing through it, ambassadors duly accredited to it, the officers and men of national ships in its ports; likewise armies moving through its territory, provided that their passing is by permission of its government.

The rights of states in time of peace consist of the rights of legation and of negotiation. Every independent state has a right, in courtesy and usage, to send public ministers or representatives to, and receive ministers from, any other sovereign state with which it desires to maintain relations of peace and amity. See AMBASSADOR: ENVOY: CHARGÉS D'AFFAIRES: CONSUL.

When war is commenced between two countries, there are certain rights acknowledged by each to exist toward the other. Before war is proclaimed, intermediate methods are sometimes adopted, with a view to avoid that last necessity; these are laying an embargo on the ships or property of the offending state found in the territory of

the offended state; also taking forcible possession of the thing in controversy, also retaliating and making reprisals. When war is once declared, the first step is to seize and confiscate all the enemy's property within the territory. It becomes unlawful for the subjects of each belligerent state to trade with the subjects of the other belligerent. The test of whether a person is a subject of either state is generally his domicile; so the character of ships depends generally on the national character of the owner, as ascertained by his domicile. As regards the conduct of one belligerent state against the other, some writers have laid it down, that everything is fair against an enemy, and that no means of punishment are too severe; but this rigid rule has been much qualified by the more humane practice of modern times. Instead of putting prisoners of war to death, the practice is to exchange or discharge them on conditions. Instead of indiscriminate destruction of the enemy's property, the structures for religion and charity, public edifices, monuments of art and science, are spared. The laws of war are more unsparing at sea than on land; the practice prevails of commissioning privateers to prey on the commerce of the enemy, the captor being in general entitled to the property. When property taken is recaptured, states differ as to the mode of dealing with the property recaptured. The validity of a capture at sea must be determined in a prize court of the captor's country or of an ally, and the prize court professes to act on universal principles applicable to all countries.

For the leading doctrines regarding neutrals in time of war, see **CONTRABAND OF WAR: BLOCKADE: FOREIGN ENLISTMENT ACT: NEUTRALS.**

At the Congress of Paris, 1856, the ambassadors of Great Britain, France, Russia, Austria, Prussia, Turkey, and Sardinia, agreed to a joint declaration modifying the state of the laws of war as follows: 1. To abolish privateering; 2. To adopt the maxim, 'free ships, free goods'—i.e., an enemy's goods shall not be taken in a neutral ship unless they are contraband of war; 3. To allow a neutral's goods in an enemy's ship to be free except as to contraband; 4. To abolish blockades unless they are real, and kept up by an effective force. These declarations were not acceded to by the United States, because as its national policy involved the maintenance of a navy much smaller than that of other nations, it objected to strip itself of all power at sea by the abolition of privateering; but in the event of war between the countries which agreed in the declaration, the above modifications are adopted. See Wheaton's *International Law*; Sir R. Phillimore's *Commentaries on International Law*; Sir Travers Twiss's *Law of Nations*; and shorter works by Kent (the *Commentary*, edited by Abdy), Woolsey, and Hall.

2. *Private International Law* is that collection of laws that regulates the mode in which ordinary courts of justice administer the remedies and give effect to the rights of parties where such rights were acquired partly or wholly in a foreign country, and where different remedies must

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otherwise have necessarily applied. In such cases, the court which administers the remedy, acting on what is called the courtesy of nations, or *comitas gentium*, endeavors to put the parties in the same position as if they were still bound by the foreign laws, and gives effect to those laws so far as they do not conflict with the native laws in essential principles. The fundamental doctrine which underlies this branch of I. L. is, that each subject of a foreign independent state is entitled to have the protection of his own laws, so far as is compatible with the equal independence of the state whose courts administer the remedy; hence, though a court can in general administer the laws of its own state only, it may, *pro hac vice*, incorporate part of the foreign laws as part of its own remedies. Accordingly, in carrying out this doctrine, certain fair and equitable rules are adopted in dealing with foreigners in certain situations, the chief of which arise in the departments of marriage, death, intestacy, and remedies generally.

This branch of the I. L. has been long cultivated by the continental countries of Europe, where many learned jurists have discussed its principles. But probably owing to the insular position of the United Kingdom, little attention was given to it there; and indeed no work in the English language even incidentally treated of the subject until Joseph Story (q.v.), a justice of the U. S. Supreme Court, in 1834 produced his celebrated treatise on the *Conflict of Laws*, and gave to British lawyers a methodical view of the results at which foreign jurists had arrived. In the United States, where each independent state had its own municipal laws, which often differed materially from those of the other federal states, it was natural and inevitable that some system should be adopted in the dealings by each state with the rights of persons coming from the neighboring states; hence America preceded England in the development of this branch of the law. Story's work is still the standard authority in the United Kingdom. Since the laws of Scotland differ in many respects from those of England and Ireland, and each country has its own courts exercising independent jurisdiction, it is a matter of course that questions of conflict under these two codes of law should often arise. Not only do the courts of Scotland and England treat the laws of the other country as foreign laws, and deal with each other in much the same way as they would deal with France or any other foreign country, but the laws of the two countries are in other respects materially different, and give rise to conflicts. On this particular branch of the law affecting England and Scotland, Paterson's *Compendium of English and Scotch Law* contains a summary of all material differences between the laws of these two countries, that are of great practical importance.

As regards marriage, the leading doctrine of the *comitas gentium* is, that it is immaterial in what part of the world a man is married provided he is married; and when once married according to the law of the place where he then is, such marriage will be held a valid marriage all the

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world over, and wherever he goes. This doctrine, however, is qualified in this way, that the *lex loci contractus*—i.e., the law of the place where the marriage was contracted—shall regulate the validity of the marriage only so far as any ceremony is essential to the institution of marriage; but it is not allowed to dictate who the parties are who may validly marry, nor to vary any essential part of the contract. The reason of the latter qualification is, that there may be rules of policy in one country which may prohibit marriages between certain persons, or may prohibit certain consequences, and therefore the evasion of the native law by persons going abroad for such a purpose is not to be tolerated. For example, in Scotland, marriage is treated as a mere contract, which requires no particular ceremony beyond mere mutual consent; while in England some ceremony is essential—viz., the ceremony of the marriage being celebrated in a parish church by a priest, or in a superintendent-registrar's office, if there is no priest. Accordingly, any two English persons may go to Scotland, and be married there by exchanging a verbal declaration of marriage; and if one had resided there 21 days before, they will be held to be married persons, and may immediately return to England, if so disposed. On the other hand, if two Scotch persons go to England, they cannot be married by exchanging mere verbal declarations; they must be married according to the English law, either by a priest in a church, or without one in a superintendent-registrar's office; and if so, they will be held to be married all the world over. Again, the law of England declares that no marriage shall be valid within certain prohibited degrees, e.g. no man is there allowed to marry his deceased wife's sister. Hence, if a man and his deceased wife's sister go from England to Denmark, where the law allows such persons to marry, and they there are married according to the form there prevailing, and then return to England, where their domicile is, they will not be treated as married persons, because they went to evade their own law in a matter which is considered of vital importance. It would, however, be different if a man and his deceased wife's sister, who were Danes, and domiciled in Denmark at the time of their marriage, went afterward to England; they would in that case be treated as properly married, for their domicile was then Danish, and they had a right to follow their own law.—Another important head of private I. L. is as to the law which regulates succession to the property of a person deceased. On this subject, the rule is, that it is the law of the country in which a man was domiciled at the time of his death which regulates the succession to his personal property, even though such property is scattered over all parts of the world; hence, it is necessary first to ascertain where the deceased person had his domicile: see DOMICILE. The above rule as to the domicile of a deceased person governing the succession applies only to his personal property; as to his landed or real property, the succession to it is governed by the law of the country where such land is situated. Hence, if an Eng-

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lishman dies domiciled in England, leaving a Scotch estate, such estate will descend according to the Scotch, and not the English law.—Another important head of private international law is as to the court in which a remedy can be obtained on ordinary contracts. The rule is, that wherever a contract was made, the contract must be valid according to the law of the place where it was made, but the remedy may be had anywhere else wherever the defendant can be found. Thus, if a person makes a contract or incurs a debt in Scotland, and afterward goes to England, he may be sued in the English courts, though the English court will allow the remedy only provided that the contract was valid according to Scotch law. It is often important to know where and in what country a person may be sued: the general rule is, that one must follow his debtor, and sue the debtor in whatever country such debtor resides.

INTERNECINE, a. *ĭn'tĕr-nĕ'sĭn* [L. *internĕcĭnŭs*, deadly, murderous—from *inter*, between; *nĕcō*, I slay or kill]: seeking mutual destruction; deadly; murderous.

INTERNEURAL, a. *ĭn'tĕr-nŭ'rāl* [L. *inter*, between; Gr. *neuron*, a nerve]: situated between the neural processes or spines.

INTERNODE, n. *ĭn'tĕr-nōd* [L. *internōdiŭm*, the space between two knots or joints—from *inter*, between; *nōdus*, a knot]: in a *plant*, the portion of the stem lying between two nodes or leaf-buds; a portion of any elongated body between two nodes or thickenings. **INTERNO'DIAL**, a. *-dĭ-āl*, lying between nodes or joints.

INTERNUNCIO, n. *ĭn'tĕr-nŭn'shĭ-ō* [L. *internuntiŭs*, a messenger between two parties—from *inter*, between; *nuntiŭs*, a messenger: It. *internunzio*]: a messenger between two courts or governments; a representative of the pope at small states or republics. **INTERNUNCIAL**, a. *ĭn'tĕr-nŭn'shal*, pertaining to an internuncio.

INTEROCEANIC, a. *ĭn'tĕr-ō'shĕ-ăn'ĭk* [*inter*, between, and *oceanic*]: lying between two seas; a communication connecting two oceans, as a railway.

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INTEROCEANIC SHIP CANAL: projected artificial water-way across the narrow strip of territory connecting N. and S. America, to facilitate the commerce of the world by shortening the time of passage between the Atlantic and Pacific oceans. The accomplishment of this scheme has been the hope of navigators almost from the discovery of the continent, and has engaged the attention of sovereigns, govts., and engineers since Galvas proposed to Charles V. of Spain a short-cut canal 1528. The earliest known surveys were made under authority of an order issued by Charles V. to Cortez 1534, and the Nicaraguan route was suggested as early as 1551. The importance of the undertaking was kept before the public from the inception of the idea. Under William Pitt a British expedition was sent to explore the region of the San Juan river, as preliminary to the construction of an interoceanic water-way by British capital and under British control 1780; the then republic of Central America made a contract with the U. S. govt. for the creation of a canal on the Nicaraguan route 1825, and when the lack of capital had prevented any work being done, renewed the effort with no better success 1831: King William I. of Holland sent Gen. Nerveer to Guatemala to negotiate a contract for building a canal, and was about beginning work when the revolution of 1830 caused that and other royal schemes to be abandoned; the French people became interested in the subject 1842, when Louis Napoleon—then a prisoner at Ham—received proposals from Central America to undertake the direction of construction; also soon afterward when the govt. of Louis Philippe sent an engineer to prepare plans through the Isthmus of Panama; and again in 1846, when Napoleon was invested by the govt. of Nicaragua with full power to organize a company in Europe for the construction of 'the Canal Napoleon de Nicaragua;' Great Britain renewed her interest 1848, when she seized the town and harbor of Greytown, the projected terminus of the Nicaraguan route; and the United States became more directly connected with the territory and project 1851, when the Nicaragua transit route was established (to facilitate quicker travel to the Cal. gold region) on what is almost the identical line of the present Nicaraguan scheme. Napoleon subsequently admitted that beside the construction of a canal from ocean to ocean, he had in his mind the establishment of a powerful empire in Central America; and Felix Belly, who had the full confidence of Napoleon after he became emperor, labored in Nicaragua with the same end in view, and 1858, May 1, secured the signing by the govts. of Nicaragua and Costa Rica of the 'Rivas Convention,' by which Belly and a firm of Paris bankers were given the concession of an interoceanic canal by the San Juan river and Lake Nicaragua. Another concession was made to the French 1868, when Michael Chevalier, also an intimate of Napoleon, was the active agent. For a time this arrangement looked promising of systematic work; but the Franco-German war put an end to all French enterprise in that quarter. Citizens of the United States

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believed that Great Britain held Greytown simply to prevent the construction of a canal by their capital with that town as the Atlantic base, and one of the objects held in view by William Walker, the noted filibuster, was to secure possession of the whole isthmus in order to promote the building of the canal by friends in the United States.

While these movements were in progress, individuals, corporations, and the U. S. govt. (by the navy dept.) were occupied from time to time in the study of the great problem. While 'Commodore' Vanderbilt was operating the Nicaragua transit route, he and other capitalists organized the American Atlantic and Pacific Ship Canal Company, and under his direction Orville Whitmore Childs, an engineer of high repute, made a thorough survey, maps, and estimates for a route from Brito on the Pacific to Greytown on the Atlantic *via* Lakes Nicaragua and Managua and the San Juan river. Vanderbilt undertook the work, but soon afterward abandoned it and disposed of his interests in Central America. Frederick M. Kelley, of New York, had surveys made of the Upper Atrato region 1853, 4, 5, and the San Blas 1863; and his engineers favored a route by the Atrato and Truando rivers. In 1870 the U. S. govt. sent Capt. Selfridge, of the navy, to survey the various routes suggested, and he recommended that by the Atrato and Napipi rivers. His expedition was followed by one under Capt. Lull, which surveyed the Panama and Nicaragua routes, and another under Capt. Schufeldt, which applied itself to the Tehuantepec route across Mexico. In 1875 a commission was appointed by the sec. of the navy, consisting of Gen. A. A. Humphreys, chief of engineers, U.S.A.; Com. Daniel Ammen, U.S.A., and Capt. C. P. Patterson, of the U. S. coast survey, to report upon the various routes that had been surveyed; and again the Nicaraguan route was recommended. In 1876 and 1880 Chief-Engineer Menocal, U.S.N., made further surveys of this route for the Nicaraguan govt.; 1885 the U. S. navy dept. sent Engineers Menocal and Peary on similar duty; 1887 a private corporation of citizens of the United States obtained a new concession from Nicaragua, and the navy dept. again detailed Engineers Menocal and Peary for surveying duty; 1888 final surveys of the Nicaraguan route were made; and 1889 Feb., the U. S. congress passed and the pres. signed a bill to incorporate the Maritime Canal Company of Nicaragua, Commander Robley D. Evans, naval sec. to the U. S. Lighthouse Board, was given a year's leave of absence to enable him to serve as supt. of construction for the company, some diplomatic matters between Nicaragua and Costa Rica were amicably arranged, and by July the work of constructing the canal with U. S. capital and engineers had been begun.

In 1878, Sep., an international congress of commercial geography was held in Paris under the presidency of the French minister of agriculture and commerce. Ferdinand de Lesseps, pres. of the French Geographical Soc. and of the Suez Canal Company, was one of the most active mem-

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bers. Under the inspiration of his opinions on the necessity, practicability, and cost of an interoceanic canal, the congress resolved to invite the international committee to meet as soon as possible to settle the question, so that the great work could be speedily begun; also resolved that the delegates on returning to their respective countries should exert all their influence to enlighten the public on the advantages of creating a new channel of maritime communication. In 1879, May, an international committee of engineers, statisticians, and scientists, met in Paris in response to the above invitation; chose De Lesseps pres.; appointed committees on statistics, economical and commercial questions, navigation, technical questions, and ways and means; unanimously favored the strict neutrality of the projected canal; and considered 8 plans for a canal presented with maps, surveys, and estimates. The committee gave the most attention to the Panama and Nicaraguan routes, and in the discussion De Lesseps—who had secured control of a concession for the Panama route granted by the U. S. of Colombia, organized a company, and was soliciting subscriptions in Europe and America—argued strongly in favor of a tide-level canal *via* Panama, and declared that a lock canal *via* Nicaragua would be unprofitable and liable to great injury by earthquakes. On a motion to designate a route, the majority of the committee voted in favor of the canal *à niveau*, or the Panama project; and 1880, Jan. 1, the first spadeful of earth was turned at Panama. For several years the French people subscribed liberally to the capital stock of the company, stimulated by De Lessep's success, with the Suez canal project, his engineering and financial abilities, and his enthusiastic declarations of the speedy completion of the work and the large dividends that it would yield. The American committee, of which Richard W. Thompson, who resigned the office of sec. of the navy 1881 for the purpose, was appointed chairman, met with no appreciable success in raising funds. Before work was begun De Lesseps estimated the cost of the Panama canal at \$94,511,363; in 1880 he gave two estimates; \$131,600,000 and \$106,000,000. In 1882 he obtained a 5 per cent. loan of \$25,000,000; 1883 a 3 per cent. of \$60,000,000; 1884 a 4 per cent., \$38,738,700; and 1886 a 3 per cent. of \$120,000,000, making with $\frac{3}{4}$ of the share capital called, \$44,250,000, a total obligation of \$287,988,700, for which, however, owing to discounts of from $12\frac{1}{2}$ to 55 per cent. he received in cash \$180,435,000 only. In 1887 the company decided to build the canal on the lock system, which De Lesseps had vigorously opposed from the start, and early in 1888 it announced that its debt in stocks and bonds, including a new loan of Mar. 14, was \$357,923,000, on which interest, fixed charges, and expense of management amounted to \$20,000,000 per annum. In 1888 new shares were issued with face value of \$22,000,000 at 3 per cent.; and in June of that year 400,000 lottery shares at \$80 face value each were taken in France at \$72 each, with a guarantee of \$3 per annum interest. In Nov. following, a second emission

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for the 1,170,000 shares remaining took place, and resulted in a complete failure, though the lottery scheme provided for 6 grand prize drawings each year, with 3 prizes of \$100,000 each, 3 of \$50,000 each, 6 of \$20,000 each, and numerous smaller prizes. On Dec. 15, the company defaulted on the payment of a quarter's interest on the bonds issued just before the lottery bonds. This was followed by the resignation of De Lesseps and his colleagues from the company, the appointment by the tribunal of the Seine of a committee to settle the company's affairs, the refusal of the French govt. to give the canal an official character by a state guarantee, the report of the liquidators that a reissue of unsold lottery bonds under par would realize \$2,500,000 and save the canal, the abandonment of this project through the unwillingness of the govt. to sanction it, the discontinuance of all work on the canal 1889, May 7, and the consequent reversion of all the machinery and other property of the company to the govt. of the U. S. of Colombia.

Of the 8 plans presented to the international committee at Paris 1879, three were for routes *via* Panama; two *via* Nicaragua; one by the Tehuantepec in Mexico, with termini in the Bay of Vera Cruz and the Gulf of Tehuantepec; one by the Atrato-Napipi, with termini in the Gulf of Darien and the Bay of Chiri-Chiri; and one by the San Blas across the narrowest part of the isthmus. The Panama routes included the American plan of Capt. Lull and Engineer Menocal for a lock-canal starting at the Bay of Colon and terminating in the Bay of Panama; length 45.45 m., cost \$96,000,000, time of transit 2.5 days; the French plan of Capts. Wyse and Reclus for a sea-level (*à niveau*) canal, beginning at Colon, piercing 25,263 ft. of mountain, and terminating in the Bay of Panama, with a lateral canal at Matachin; length 46.6 m., cost \$95,000,000; and the French plan for a lock-canal by the same engineers, involving the converting of the Chagres and Rio Grande rivers into two lakes, and their connection by a cutting, and a descent at Colon and Panama by means of 5 locks; length 45.36 m., cost \$85,600,000, time of transit 2 days. The Nicaragua routes included the favorite American plan presented by Capt. Lull and Engineer Menocal, extending from the harbor of Greytown on the Caribbean Sea at the mouth of the San Juan river, along that stream to the mouth of the San Carlos, thence through Lake Nicaragua a distance of 56 m., to a point near the Rio del Medio, through the Rio Grande, across Rivas pass, and terminating in Brito harbor, near the mouth of the Rio Grande, with breakwaters at Greytown and Brito and 10 locks at each end of the lake; length 180 m., extent of artificial work 62 m., cost \$52,577,718 or with allowance for errors, etc., \$65,722,147, time of transit 4½ days; and the French plan of engineer Blanchet for a combined lock-and-level canal, extending the level of Lake Nicaragua into the San Juan river by a dam, converting the Rio Grande valley into a lake similarly, cutting Greyscoyal pass, and erecting locks at Brito; length 182.4 m., cost \$72,400,000, time of transit 4½ days.

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The failure of the Panama Canal Company stimulated interest in the Nicaraguan route, and work on that line was vigorously pushed after the incorporation of the company by the U. S. congress. By the survey of 1885, the cost of the canal was estimated at \$65,000,000, and by the final one in the winter of 1887-8, that figure was reduced to \$50,000,000, with an allowance of \$1,767,000 for the improvement of Greytown harbor and the construction of a breakwater 3,000 ft. out into the Caribbean Sea. The summit-level of the canal will be 110 ft. above mean sea-level, and will be reached at each extremity by 3 locks, each 650 ft. long and 65 ft. wide. An artificial lake and repairing basin for ships in transit will be created by means of a dam across the San Juan and an embankment across the San Carlos near their junction; and from the last lock to Greytown on the e., and to Brito on the w., the canal will be enlarged, forming extensions of the harbors, where vessels can pass each other without detention. The last survey (1887-8) shows a total length from Greytown to Brito of 169.8 m., of which 139.9 are free navigation, and 29.9 excavation. The saving of 9.9 m. of excavation reduces the cost of the 1885 survey, \$65,000,000, to \$50,000,000, and the time of construction to a little less than 6 years. The most serious engineering difficulties in the entire work were said to be the great divide cut across the San Francisco range, which would be through a 3 m. stretch of rock with an average depth of 120 ft., and the restoration of the harbor of Greytown, long ago destroyed by silt deposit from the San Juan river. It was estimated that when completed 32 vessels could pass through any lock in the canal in one day.

In 1892, Nov., M. Delahaye, member of the French chamber, declared that the privileges which the Panama company had obtained had been used to bribe a number of the deputies and to defraud the investors. An investigation led to the prosecution of the directors. Fortunately for them Baron Reinach, a financier charged with a large part of the corruption of the company, died suddenly. It was said he had committed suicide.

The investigation was pursued amid much clamor, and a gigantic swindle was exposed. Over 83,000,000 francs were spent on 'advertising'; 500,000 francs for 'political purposes'; deputies, 150 it was said, were bribed; the influence of several newspapers was bought, and the chief of the detective bureau had been in the pay of the directors. Nearly 2,500,000,000 francs had been spent in the attempt to cut the canal.

Ferdinand and Charles De Lesseps, accused of fraud and bribery, were brought to trial 1893, Jan. 10, found guilty, and sentenced, Feb. 14, to imprisonment for 5 years and to be fined 3,000 francs. Among others M. Eiffel was sentenced to 2 years' imprisonment and a fine of 20,000 francs. The sentence of Ferdinand De Lesseps was not executed and he was allowed to die in peace (1894, Dec. 5).

Later, evidence was produced which involved M. Bourgeois, a minister, M. Baihaut, former head of the department of public works, M. Soinoury, chief of the detective bureau, Dr. Cornelius Herz, a lobbyist, and Arton, one of

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the leaders in the bribing of ministers. Baihaut confessed to having been bribed with 375,000 francs and was sentenced to 5 years' imprisonment, loss of civil rights, and a fine of 75,000 francs. Arton and Dr. Herz escaped. In his absence the former was sentenced to 20 years' penal servitude, 5 years' civil degradation, and a fine of 400,000 francs. Herz, who had withdrawn to England, was pursued by the French government, which strove without success to obtain his extradition. Eventually a compromise was effected, and, on payment of 300,000 francs by Herz, all civil suits against him were withdrawn, as was also the demand for his extradition. The sentences on those imprisoned were soon set aside on technical grounds, and within a year all were set free.

In 1894, Sep., 300,000 new shares of stock were issued. Although this issue was made to renew operations, it was not until the end of 1895 that serious work was resumed. Then about 2,000 men were set at work. In 1896 these employees struck for higher wages, but the work was continued.

The course of the promoters of the Nicaragua ship canal ran somewhat more smoothly. A company with \$10,000,000 capital to aid in the building of the Nicaragua canal was formed in San Francisco 1893, but later that year the Nicaragua Canal Construction Co. was in financial trouble. When reorganized by New York capitalists it had \$12,000,000 capital. In 1894 (Jan. 22) a bill asking for government help was presented in the U. S. senate. After considerable delay it was passed by that body only to be neglected in the house of representatives. But the U. S. govt. appointed a commission to examine the route of the canal, and its report (1895, Dec.) was unfavorable to the enterprise. In 1902 the U. S. Congress passed an act for the construction of a canal on the Panama route, which provided for the purchase of the rights and property of the French Panama Canal Co. for \$40,000,000.

IN'TEROCEAN'IC SHIP RAIL'WAY: railway across the Isthmus of Tehuantepee, Mexico, for the overland transportation of ships between the Atlantic and Pacific oceans, projected by James B. Eads (q.v.). The Isthmus is about 121 m. wide from ocean to ocean. Natural obstacles render the line somewhat circuitous, and add 30 m. to the actual length of the projected railway. This interoceanic route would shorten the distance between New Orleans and San Francisco 2,300 m., or 7 days as compared with the Panama route.

In 1879, June, Edward Learned obtained a concession from the Mexican govt. for the construction of railway and telegraph lines across the Isthmus from Coatzacoalcos, on the Gulf of Mexico, to the Upper Lagoon, a sound on the Pacific coast; and 1880, Dec., Capt. Eads completed negotiations with the same govt. for building a ship-railway along this route. The Mexican govt. also gave him a subvention of \$1,500,000, to be paid in custom-house receipts, and, with a view of securing the active co-operation of the U. S. govt. in the scheme, granted him the right to hypothecate the revenues of the road to any other govt. which

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might aid the construction by money or guarantees. In 1881, Jan., Capt Eads, with a corps of engineers and an auxiliary commission of Mexican engineers, proceeded to the Isthmus in a Mexican war-vessel to make further surveys. In the latter part of the same year a bill to incorporate the Interoceanic Ship Railway Company was introduced into the U. S. congress, and favorably reported by the senate committee on commerce 1882, March. The bill provided for a guarantee on the part of the U. S. govt. that the company would pay during a period of 15 years annual dividends at the rate of 6 per cent. per annum on \$50,000,000. or $\frac{2}{3}$ of its capital stock, for which guarantee the company proposed first to carry upon its railway all govt. vessels, troops, and mails, free of charge; and second, to carry all vessels belong to persons of the United States and Mexico for 50 per cent. of the tolls imposed for carrying vessels of any other nation. Despite his persistence he failed to induce the govt. to aid the project, and abandoning this attempt he introduced a bill to incorporate a construction company with a capital of \$100,000,000. This was passed by the senate early in 1887, too late for action in the house; and, Mar. 8, the project died. In 1888 a corporation which acquired all the rights in the Mexican concession to Capt. Eads, was organized in New York as the Atlantic and Pacific Ship-Railway Company, and chose Benjamin Blake, an English civil-engineer, as supt. of construction. At the time of writing no material progress had been reported. As originally surveyed the road would run nearly s. along the w. slope of the Coatzacoalcos river, and one of its branches, to the summit of the mountain, 30 m. n. of the Pacific. The grade for 10 m. would be about level, and then the road would rise for 20 m. to 200 ft. above sea-level. It would cross the Jallepan river by a single span (150 ft.) bridge, then extend by a grade of 20-50 ft. per m. to the summit, which is 750 ft. above sea-level. The descent of the w. slope would be accomplished by a fall of some 80 ft. to the m. for the first 5 m., and by a decline of 20-30 ft. per m. the remaining distance. Of the entire route it was estimated that 100 m. of the road would be built with comparatively easy grading, and that only 10 m. would be expensive mountain work.

INTEROCULAR, a. *in-tér-òk'ù-lér*: in *anat.* and *entom.*, situated between the eyes.

INTERORBITAL, a. *in-tér-awr'bít-al*: in *anat.*, between any orbits, as those of the eyes.

INTEROSCULANT, a. *in tér-òs'kù-lant*: connecting two different assemblages of any kind, as a variety connecting two species, a species two genera, a genus two families, a family two tribes, a tribe two orders.

INTEROSSEAL, a. *in'tér-òs'sě-ál* [*L. inter*, between; *os-sěus*, made of bone—from *os*, a bone]: situated between or within the bones: also **IN'TEROS'SEOUS**, a. *-òs'sě-ús*.

INTEROSSEI, n. *in-tér-òs'sě-ì*: in *anat.*, two sets of muscles. The dorsal interossei, seven in number, withdraw the fingers from the middle line of the hand; there are

INTERPELLATION—INTERPOLATE.

corresponding muscles in the foot, four dorsal and three plantar.

INTERPELLATION, n. *in'tér-pěl-lā'shŭn* [F. *interpellation*, a summons, a call for a reply—from L. *interpellatōnem*, a hindrance—from *inter*, between; *pello*, I drive, I interrupt]: an interruption of one speaking; a question; a summons or citation; any point raised in the course of a debate. **INTER'PELLATE**, v. *-lāt*, to break in upon or interrupt a debate, by raising another question; to put a question. **INTER'PELLATING**, imp. questioning; putting a question publicly for information. **INTERPELLATED**, pp.

INTERPENETRATE, v. *in'tér-pěn'ě-trāt* [*inter*, between or among, and *penetrate*]: to penetrate within or between substances, so as nearly to effect union; to influence widely and deeply. **IN'TERPEN'ETRATING**, imp. **IN'TERPEN'ETRATED**, pp. **IN'TERPENETRA'TION**, n. *-trā'shŭn*, the act of penetrating deeply within or between; an influence deeply effected and widely felt.

INTERPETIOLAR, a. *in'tér pět'ĩ-ō-lér* [*inter*, between, and *petiolar*]: in *bot.*, situated between the petioles or bases of opposite leaves.

INTERPHALANGEAL, a. *in-tér-fa-lăn'jē-al*: in *anat.*, between the phalanges of the hand and foot. There are interphalangeal articulations of both.

INTERPILASTER, n. *in-tér-pĩ-lās'tér*: in *arch.*, space between two pilasters.

INTERPLEAD, v. *in'tér-plēd'* [*inter*, between, and *plead*: F. *entreplaider*]: in *law*, to discuss a point incidental to the principal cause. **IN'TERPLEAD'ER**, n. the discussion of an incidental point, before the principal cause can be determined; a bill in equity praying for the safety of the person exhibiting it. **INTERPLEADER SUIT**, suit to determine which of several parties claiming the same thing is entitled: see **MULTIPLEPOINDER**.

INTERPOLATE, v. *in-tér-pō-lāt* [L. *interpōlātus*, given a new face or appearance to, repaired, interpolated—from *inter*, between; *pōliō*, I trim or deck: It. *interpolare*: F. *interpoler*]: to insert unfairly; to foist or thrust in; to add a word or passage to what has been written by another; to alter a book or manuscript; in *math.*, to fill up intermediate terms. **INTER'POLATING**, imp. **INTER'POLATED**, pp. **IN'TER'POLATOR**, n. *-tér*, one who. **INTER'POLA'TION**, n. *-lā'shŭn* [F.—L.]: the act of interpolating; something inserted spuriously; a word, line, verse, sentence, part of a sentence, or whole passage, inserted generally with a view to secure respect for some opinion by the apparent support of antiquity, or of those whose authority is greatest. Many instances of interpolation are well known, and others are with great probability suspected, in which the works of early Christian writers have been tampered with, to make them yield support to novel doctrines and practices. In *math.*, the operation or method of finding, from a few given terms of a series, other intermediate terms; in *nav.*, the finding a value of an element which falls between two given values;

INTERPOSE—INTERPRETATION.

the inserting between two members of a series increasing according to a certain law, of other members such as, if not absolutely, yet very nearly, may accord with the same law.

INTERPOSE, v. *in'tér-pōz'* [L. *interpōsitus*, placed or set between—from *inter*, between; *pōnō*, I place: F. *interposer*, to interpose]: to place between, as a hindrance or obstacle; to offer, as aid or services; to step in between persons at variance; to interfere; to mediate. **IN'TERPO'SING**, imp. **IN'TERPOSED**, pp. *-pōzd*. **IN'TERPO'SER**, n. *-zér*, one who. **IN'TERPO'SAL**, n. *-zál*, or **INTERPOSITION**, n. *in-tér'-pō-zish' ún* [F.—L.]: a placing or coming between; mediation between parties at variance; intervention; that which is interposed: intervening agency.—**SYN.** of 'interpose': to intercede; interfere; intermeddle; intrude; offer; interrupt.

INTERPRET, v. *in-tér'prèt* [F. *interpréter*—from L. *interpretārī*, to explain or expound—from *inter'prēs*, an expounder: It. *interpretare*]: to explain or unfold the meaning of; to expound; to decipher; to give a solution to. **IN'TER'PRETING**, imp. **INTER'PRETED**, pp. **INTER'PRETER**, n. *-prèt-ér*, one who or that which explains; an expositor; one who in a court of law translates or explains the evidence of foreigners; a translator of languages. **INTER'PRETABLE**, a. *-prèt-à-bl*, that may be interpreted. **INTER'PRETA'TION**, n. *-tā'shún* [F.—L.]: the act of interpreting or expounding; explanation of what is obscure or unintelligible; exposition; the sense given by a particular interpreter. **INTER'PRETA'TIVE**, a. *-tív* [F. *interprétatif*—from mid. L. *interpretātīvus*]: explanatory; containing explanation. **INTER'PRETA'TIVELY**, ad. *-lǐ*.—**SYN.** of 'interpret': to explain; translate; define; unfold; clear; unravel; elucidate; illustrate.

INTERPRETA'TION, in Law: determination of the exact meaning of the words of the author in a will, contract, treaty, or other important legal document that is brought to action in a court of justice. The act of determination is predicted on the assumption that, the author knew exactly what he wished to state, but from imperfect education or other causes could not, or did not use language that would show clearly his intent to others. To arrive at an exact understanding of a person's intent is so important in equity that several rules have been formulated to aid the determining authority; and these are applied where it is sought to obtain a legal construction of an ambiguous, obscure, or apparently conflicting clause in a will, deed of trust, contract, or similar document. Thus, in practice, it would be inquired: What is the actual statement? and to the answer, if insufficient, would be added whatever might be implied in the same line by usage. A word necessary to complete the sense of intent, omitted by seeming inadvertence, may be supplied in documents not wills; of words having two senses only that which conforms to the law may be considered; and all words are to be weighed in the common, popular sense, unless it is clearly evident that the writer did not understand their meaning or inserted them carelessly. Only what is stated can be considered; oral evidence to show that the writer meant a directly op-

INTERRED—INTERRUPT.

posite statement or to add to or vary the terms of a written document will not be permitted by a court; but a comparison of clauses, conditions, specifications, etc., with the context or whole body of the direct statement, preamble, resolution, agreement, etc., is entirely proper. It is generally held that, when there are two repugnant clauses in a deed, which cannot stand together, the first should prevail; but in a will this rule is reversed and the last expression regarded as the testator's actual intent. In interpreting legislative bills, statutes enactments, etc., it is first sought to ascertain the exact meaning of the writer of the document, and then the precise understanding the legislature had of it when on its passage. In the United States the highest interpreter of the federal constitution is the U. S. supreme court; acts of congress may be interpreted by subordinate U. S. courts for general observance, or by state courts for observance within the state. It is the duty of courts generally to interpret all written documents on application.

INTERRED, pp. INTERRING, imp.: see under INTER 2.

INTERREGNUM, n. *in'tér-rĕg'nŭm* [F. *interrègne*—from L. *inter*, between, *regnum*, kingly government]: the time during which a throne is vacant; time intervening.

INTERROGATE, v. *in-tĕr'rō-gāt* [L. *interrogātus*, questioned—from *inter*, between; *rōgō*, I ask: It. *interrogare*: F. *interroger*]: to question; to examine by asking questions. INTER'ROGATING, imp. INTER'ROGATED, pp. INTER'ROGATOR, n. -tĕr, one who. INTER'ROGA'TION, n. -gā'shŭn [F.—L.]: examination by questions asked; a question put; a mark, thus (?), to indicate that a question is asked. INTERROGATIVE. a. *in'tér-rōg'ă-tĭv* [F. *interrogatif*—from mid. L. *interrogātīvus*]: expressed in the form of a question: N. in *gram.*, a word which indicates that a question is asked. IN'TERROGATIVELY, ad. -lĭ, in the form of a question. IN'TERROG'ATORY, a. -tĕr-ĭ, containing or expressing a question: N. a question or inquiry formally put to a witness.—SYN. of 'interrogate': to inquire; ask; query.

IN TERROREM, *in tĕr-rōr'ĕm* [L. for fear]: as a warning to deter or compel; as a bugbear.

INTERRUPT, v. *in'tér-rŭpt'* [L. *interrup'tus*, separated by breaking or rending—from *inter*, between; *rum'pĕrĕ*, to burst or rend]: to stop or hinder by breaking in upon the course or progress of; to divide or separate. IN'TERRUP'-TING, imp. IN'TERRUP'TED, pp.: ADJ. hindered from proceeding; broken; in *bot.*, having the symmetry or regularity of outline or composition partially destroyed. IN'TERRUP'TEDLY, ad. -lĭ. IN'TERRUP'TER, n. -tĕr, one who. IN'TERRUP'TION, n. -shŭn [F.—L.]: hindrance; that which interrupts; obstruction; interposition. IN'TERRUP'TIVE, a. -tĭv, tending to interrupt. IN'TERRUP'TIVELY, ad. -lĭ. INTERRUPTEDLY-PINNATE, in *bot.*, having a pinnate leaf in which pairs of small pinnæ occur between the larger pairs.—SYN. of 'interruption': breach; break; intervention; stop; cessation; intermission.

INTERSCAPULAR—INTERSTATE TRAFFIC.

INTERSCAPULAR, a. *in-tér-skăp'û-lér*: in *anat.*, situated between the shoulder-blades.

INTERSECT, v. *in'tér-sěkt'* [L. *intersectus*, divided by cutting—from *inter*, between; *sēcō*, I cut: It. *intersecare*]: to cut or cross mutually; to meet and cross each other. **IN'TERSEC TING**, imp. **IN'TERSEC T'ED**, pp. cut or divided into parts. **IN'TERSEC TION**, n. *-sěk'shūn* [F.—L.]: the cutting or crossing of each other of lines or planes; the point where lines, etc., cut or cross each other.

INTERSPACE, n. *in'tér-spās* [*inter*, and *space*]: a space between other things.

INTERSPERSE, v. *in'tér-spér's'* [L. *intersper'sus*, scattered among—from *inter*, among; *sparsus*, sowed, sprinkled]: to scatter here and there among other things. **IN'TERSPERS'ING**, imp. **IN'TERSPERSED'**, pp. *-spérst'*. **IN'TERSPER'SION**, n. *-spér'shūn*, the act of scattering.

INTERSPINAL, a. *in'tér-spī'nāl*, or **IN'TERSPI'NOUS**, a. *-spī'nūs* [L. *inter*, between; *spīna*, a spine, a thorn]: in *anat.*, inserted between the spinous processes of the vertebræ.

INTERSTAMINAL, a. *in'tér-stūm'î-nāl* [L. *inter*, between, and *staminal*]: in *bot.*, an organ placed between two stamens.

INTERSTATE TRAFFIC ON RAILROADS, etc.: traffic crossing state boundaries. Under an act of congress to regulate commerce, approved 1887, Feb. 4, an interstate commerce commission of 5 members was appointed by the pres. to inquire into the management of the business of all common carriers engaged in the transportation of passengers or property wholly by railroad, or partly by railroad and partly by water when both are used, from one state or terr. to another state or terr.. or from any place in the United States to an adjacent foreign country, or from any place in the United States through a foreign country to any other place in the United States; and to authorize in special cases any such common carrier to charge less for a long distance than for a shorter one over the same line; and to prescribe the extent to which the carrier may be relieved from the 'long and short haul' clause of the constituting act. The annual report of the commission for the fiscal year ended 1895, June 30, showed the extent and condition of the various railroads in the United States as follows: number of railroads reported 1,965, aggregate mileage in operation 180,657.47 m., capital \$10,963,584,385, or \$63,206 per mile. Earnings and income for the year were: passenger service \$252,246,180, or 23.46 per cent. of total income; freight service \$729,993,462, or 67.88 per cent. of income; other earnings \$93,131,820, or 8.66 per cent. of income; total earnings from operation \$1,075,371,462; income from other sources \$132,432,133; total income \$1,207,803,595. Expenditures were: maintenance of way and structures \$143,976,344, or 13.28 per cent. of total expenditures; maintenance of equipment \$113,788,709, or 10.50 per cent. of expenditure; conducting transportation \$431,148,963, or 39.76

INTERSTELLAR—INTERVAL.

per cent. of expenditure; general expenses \$35,907,017, or 3.31 per cent. of expenditure; not classified \$899,382, or .08 per cent; total operating expenses \$725,720,415; fixed charges \$358,551,762, or 33.07 per cent. of expenditure; total expenditures all roads \$1,151,687,336. The following was the mileage of the leading states and territories in their order: Ill. 10,649; Pa. 9,751; Tex. 9,375; Kan. 8,812; Ohio 8,615; Iowa 8,513; N. Y. 8,103; Mich. 7,668; Mo. 6,592; Ind. 6,395; Wis. 6,051; Minn. 6,045; Neb. 5,566; Ga. 5,102; Cal. 4,853; Colo. 4,551; Ala. 3,701; Va. 3,574; N. C. 3,437; Tenn. 3,110; Ky. 3,034; F. 3,000; Mont. 2,841; Wash. 2,840; S. D. 2,798; S. Car. 2,636; Ark. 2,544; N. D. 2,523; Miss. 2,505; N. J. 2,216; Mass. 2,119; La. 2,106; W. Va. 1,994; Me. 1,643; Ore. 1,521; N. M. 1,487; Utah 1,376; Ariz. 1,371; Md. 1,301; N. H. 1,206; Wy. 1,180; Ida. 1,085; Conn. 1,008; I. T. 1,000. In 1902 the total mileage was 197,237.

INTERSTELLAR, a. *in'tér-stél'lér*, or **IN TERSTEL'LARY**, a. *-lér-í* [L. *inter*, between; *stella*, a star]: among the stars; beyond the limits of our solar system.

INTERSTICE, n. *in'tér-stis*, or *in-tér'stis* [F. *interstice*—from L. *interstitium*, distance or space between—from *inter*, between; *sistere*, to stand, to place]: a space which stands between things; a narrow or small space between things closely set; a small intervening space. **INTERSTI'TIAL**, a. *-stish'ál*, pertaining to or containing interstices. **INTERSTI'TIALLY**, ad. *-ál-lí*.

INTERSTRATIFIED, a. *in'tér-strät'í-fīd* [*inter*, between, and *stratified*]: in *geol.*, stratified or bedded along with other strata.

INTERTEXTURE, n. *in'tér-těks'tūr* [*inter*, between, and *texture*]: the act of interweaving; the state of being interwoven.

INTERTIE, n. *in'tér-tī* [*inter*, among, and *tie*]: a horizontal timber framed between two posts.

INTERTRIGO, n. *in'tér-trī'gō* [L. *inter*, between; *tērō*. I rub, *trivō*, I have rubbed]: a local condition of the skin, called 'chafe' or 'fret,' consisting in redness and excoriation of a part of the skin, caused by friction.

INTERTROPICAL, a. *in'tér-trōp'í-kāl* [L. *inter*, between, and *tropical*]: situated between the tropics.

INTERTWINE, v. *in'tér-twīn'* [*inter*, between, and *twine*]: to unite by twisting one with another. **INTER-TWÍ'NING**, imp. **IN'TERTWINED'**, pp. *-twīnd'*. **IN'TERTWÍ'NINGLY**, ad. *lí*.

INTERTWIST, v. *in'tér-twíst'* [*inter*, among, and *twist*]: to twist one with another.

INTERVAL, n. *in'tér-vál* [F. *intervalle*—from L. *inter-val'lum*, space between—from *inter*, between; *vallum*, a wall, a trench: It. *intervallo*]: space or distance between places or things; time between two acts or events; distance between two different sounds in music.

IN'TERVAL, in Music: difference of pitch between

INTERVEIN--INTERVERTEBRAL.

sounds in respect to height or depth, or the distance on the staff from one note to another, in opposition to the unison, which is two sounds exactly of the same pitch. From the nature of our system of musical notation, which is on five lines and the four intervening spaces, and from the notes of the scale being named by the first seven letters of the alphabet, with repetitions in every octave, it follows that there can be only six different intervals in the natural diatonic scale until the octave of the unison be attained. To reckon from C upward, we find the following intervals: thus, C to D is a second; C to E is a third; C to F is a fourth; C to G, a fifth; C to A, a sixth; C to B, a seventh; and from C to C is the octave, or the beginning of a similar series. Intervals above the octave are therefore merely a repetition of those an octave lower; thus from C to D, above the octave, though sometimes necessarily called a ninth, is neither more nor less than the same I. which, at an octave lower, is termed the second. A flat or a sharp placed before either of the notes of an I. does not alter the name of the I., though it effects its quality; for example, from C to G \sharp is still a fifth, notwithstanding that the G is raised a semitone by the sharp. Intervals are classified as Perfect, Major, and Minor. Perfect intervals are those which admit of no change whatever without destroying their consonance; these are the fourth, fifth, and the octave. Intervals which admit of being raised or lowered a semitone, and are still consonant, are distinguished by the term *Major* or *Minor*, according as the distance between the notes of the I. is large or small. Such intervals are the third and sixth; for example, from C to E is a major third, the consonance being in the proportion of 5 to 4; when the E is lowered a semitone by a flat, the I. is still consonant, but in the proportion of 6 to 5, and is called a minor third. The same description applies to the I. of the sixth from C to A, and from C to A flat. The second and seventh, though reckoned as dissonances, are also distinguished as major and minor. The terms 'extreme sharp' and 'diminished' are applied to intervals when they are still further elevated or depressed by a sharp or a flat. For the mathematical proportions of intervals, see HARMONICS.

INTERVEIN, v. *în'tér-vân'* [*inter*, between, and *vein*]: to intersect with veins. **IN'TERVEINED'**, pp. *-vând'*: **ADJ.** intersected as with veins.

INTERVENE, v. *în'tér-vên'* [*F. intervenir*—from *L. intervenire*, to come between—from *inter*, between; *vênire*, I come: *It. intervenire*]: to come or be between persons or things; to happen between acts or events; to come between points of time; to interpose. **IN'TERVE'NING**, imp.: **ADJ.** coming between persons, things, events, or points of time; intermediate. **IN'TERVED'**, pp. *-vënd'*. **IN'TERVEN'TION**, n. *-vên'shün* [*F.*]: act of intervening; state of being or coming between; interposition.

INTERVERTEBRAL, a. *în'tér-vér'tě-bräl* [*inter*, between, and *vertebral*]: situated between the joints of the vertebræ or spine.

INTERVIEW—INTESTINE.

INTERVIEW, n. *in'tér-vũ* [OF. *entreveu*, beheld—from *entre*, between; *veu*, pp. of *voir*, to see—from L. *vidēre*, to see: *inter*, between, and Eng. *view*]: a mutual sight or view; a formal or appointed meeting; a conference. **INTERVIEW**, v. *in'tér-vũ* [an Americanism]: to visit a high personage, a literary character, or one who has become famous or notorious, for the purpose of obtaining correct information of incidents in life, or of opinions. **INTERVIEW'ING**, imp. **IN'TERVIEWED'**, pp. *-vũd'*.

INTERVOLVE, v. *in'tér-volv'* [L. *inter*, between, *volvĕre*, to roll]: to involve one within another. **IN'TERVOLV'ING**, imp. **IN'TERVOLVED'**, pp. *-volv'*.

INTERWEAVE, v. *in'tér-wĕv'* [*inter*, between, and *weave*]: to intermix; to weave together; to intermingle. **IN'TERWEAV'ING**, imp. **IN'TERWEAVED'**, pp. *-wĕvd'*. **IN'TERWO'VEN**, pp. *-wō'vn*, woven among: **ADJ.** intermixed or worked in as a part.

INTERWREATHED, a. *in'tér-rĕthd'* [*inter*, between, and *wreathed*]: woven in a wreath.

INTESTATE, a. *in-tĕs'tāt* [F. *intestat*—from L. *intestātus*, that has made no testament or will—from *in*, not; *testor*, I bear witness, I make a last will or testament: It. *intestato*]: dying without having made a will; not disposed of by will: **N.** a person who dies without making a will. **INTESTACY**, n. *-tă-sĭ*, the state of dying without having made a valid will. Every person has the right, as one of the incidents of ownership, of regulating the succession of his property after his death; i.e., of executing a will which must comply with certain requisites, so as to show that it was solemnly and deliberately made, by which will the owner can give his property to whomsoever he pleases. There is some restriction on the right of testing or bequeathing property; but in all places the principle is, that if no will, or deed equivalent to a will, is executed, or, if a will executed is invalid from defect of form, then an intestacy occurs, and the law provides an heir or next of kin, in lieu of the owner himself doing so. See **HEIR: SUCCESSION: WILL**. A person may die partially intestate, for his will may have included only some of his property, in which case the property not so included goes to the heir-at-law, or next of kin, according as it is real or personal estate, as if no will had been made. But it is often a difficult question in construing the will, whether the property not specially mentioned was not conveyed by general words to the residuary legatee or devisee—a question which turns entirely on the language used in each case.

INTESTINE, a. *in-tĕs'tĭn* [F. *intestin*—from L. *intestĭnus*, inward, hidden—from *intus*, within: It. *intestino*]: contained internally in the animal body; domestic, always in a bad sense, as intestine wars or troubles; not foreign. **INTES'TINES**, n. plu. *-tĭnz*, the bowels; the entrails; the canal or tube leading from the stomach to the anus (see **DIGESTION**). **INTES'TINAL**, a. *-tĭ-nāl*, pertaining to the intestines.

INTEXINE—INTOLERABLE.

INTEXINE, n. *in-těks'in* [L. *intus*, within, and Eng. *extine*]: in *bot.*, one of the inner coverings or membranes of the pollen-grain, situated between the *extine* and the *exintine*.

INTHRALL, v. *in-thrawl'* [*in*, into, and *thrall*]: to enslave; to shackle. **INTHRALL'ING**, imp. **INTHRALLED'**, pp. *-thrawd'*, enslaved. **INTHRAL'MENT**, n. slavery; bondage; also spelled with **EN** for **IN**.

INTHRONE: see **ENTHRONE**.

INTIMACY, n. *in'ti-mă-si* [L. *intimŭs*, most inward, very familiar: It. *intimo*; OF. *intime*, inward, secret, intimate]: close familiarity or friendship. **INTIMATE**, a. *in'ti-măt*, close in friendship; familiar: N. a familiar or confidential friend: V. in *OE.*, to share together as friends. **IN'TIMATELY**, ad. *-lŭ*.—**SYN.** of 'intimacy': acquaintance; familiarity; fellowship; friendship; companionship.

INTIMATE, v. *in'ti-măt* [mid. L. *intimătŭs*, brought within, announced—from L. *intimŭs*, the inmost: It. *intimare*; F. *intimer*, to signify, to give notice]: to suggest obscurely or indirectly; to hint or mention briefly; to give a short or slight notice of; to announce. **IN'TIMATING**, imp. **IN'TIMATED**, pp. **IN'TIMA'TION**, n. *-mă'shŭn* [F.—L.]: direction or notice given; a hint; a declaration or remark; an announcement. *Note.*—**INTIMATE** 1 and 2 are confusedly intermingled in their spellings and meanings. **INTIME**, *in'ti-mě* is the *OE.* and correct spelling of **INTIMATE**, as given under **INTIMACY**—see **Skeat**.

INTIMATE, a.: close in friendship: see under **INTIMACY**.

INTIMIDATE, v. *in-tim'ĭ-dăt* [mid. L. *intimidătus*, frightened—from *in*, in; *timidus*, fearful: F. *intimider*, to intimidate]: to inspire with fear, as by threats of violence; to deter; to dishearten. **INTIM'IDATING**, imp. **INTIM'IDATED**, pp. **INTIM'IDA'TION**, n. *-dă'shŭn*, the act of making fearful; the state of being intimidated.—**SYN.** of 'intimidate': to frighten; terrify; dispirit; abash.

INTINE, n. *in'tin* [L. *intus*, within]: in *bot.*, the inner covering of the pollen-grain; secundine.

INTITULED, a. *in-ti'tŭld* [F. *intituler*, to entitle, to name; *intitulé*, entitled (see **ENTITLE**)]: distinguished by a title—used in connection with law, and with parliament.

INTO, prep. *in'tô* [*in*, and *to*]: a word which denotes entrance or passage inwards; denoting the passing from one state or form to another. *Note.*—**INTO** comes after a verb denoting motion, and **IN** follows a verb denoting rest.

INTOLERABLE, a. *in-tôl'ěr-ă-bl* [F. *intolérable*—from L. *intolĕrābilis*, insupportable—from *in*, not; *tolĕrō*, I bear or sustain: It. *intolerabile*]: that cannot be borne; insupportable; insufferable. **INTOL'ERABLY**, ad. *-ă-blŭ*, to a degree beyond endurance. **INTOL'ERABLENESS**, n. *-bl-něs*, quality of being not tolerable. **INTOL'ERANCE**, n. *-ăns* [F.—L.]: the not enduring differences of opinion or practice in others; want of toleration. **INTOL'ERANT**, a. *-ănt* [F. *intolérant*—from L. *intol'ĕrans*, or *intoleran'tem*]: not

INTOMB—INTONING.

enduring, as difference of religious opinion or worship: N. one who does not favor toleration; a bigot. INTOL'ER-ANTLY, ad. *-lī*. INTOL'ERATED, a. not endured. INTOL'-ERA'TION, n. *-ā'shūn*, refusal to suffer difference of opinion or worship in others.

INTOMB: see ENTOMB.

INTONATE, v. *in'tō-nāt* [L. *intōnātūs*, thundered forth, given out a loud sound—from *in*, in; *tōnō*, I thunder]: to sound loudly; to modulate the voice in speaking; to utter musical notes. IN TONATING, imp. IN'TONATED, pp. IN'-TONA'TION, n. *-nā'shūn* [F.—L.]: *literally*, a loud noise or sound; the act of sounding musical notes; the utterance of words in a measured or musical way; the modulation of the voice in speaking. IN'TONATOR, n. *-ēr*, in *mus.*, a monochord or single string, stretched across a flat sound-board. Below the string is a diagram of the exact divisions of the monochord necessary for the production of the true musical scale. By means of a movable bridge, the student is able to sound the notes represented on the diagram, and so, to educate his ear to a true sense of relative pitch. INTONE, v. *in-tōn'* [mid. L. *intonārē*, to sing according to tone—from *tonus*, a tone—from Gr. *tonos* (see TONE)]: to utter a slow, protracted, musical sound; to read in a recitative or singing style; to chant. INTO'NING, imp. INTONED, pp. *in-tōnd'*.

INTONING: recitative form of offering prayer, or of rendering other parts of public Divine service. It differs from ordinary reading in having fewer inflections of the voice, and these only at stated parts of the prayers, and according to certain rules. The greater part of the prayer is recited on one note, the last two or three words being sung to the proximate notes of the scale. In the longer prayers, the terminal inflection is generally omitted. The words intoning and chanting are sometimes used interchangeably; but, though there is ground common to both, each has a domain peculiar to itself. I. may be defined as ecclesiastical recitative, and when several voices are employed in its performance they sing, for the most part, in unison, breaking into harmony at the termination of the clause or sentence. Chanting embraces recitative and rhythm, both divisions being in continuous harmony. In the Anglican service, as performed in cathedral churches, all those parts of the ritual, speaking generally, which are not set to rythmical music, are intoned; these embrace that part of the morning and evening service which precedes the daily psalms, the litany, and the prayers in general.

John Marbeck (1550) was the first in England to adapt the offices of the reformed church to music; his work contained melody only. He was followed by Thomas Tallis, whose period was in the reigns of Henry VIII., Edward VI., Mary, and Elizabeth. The grave melody (founded on the ancient usage) and sublime harmonies of Tallis have never been equalled, and have continued in use till the present day with but slight modification. Tallis seems to have invented the form of the Anglican chant now used for the psalms. In the Rom. Cath. Church these are sung

INTORT—INTOXICATE.

to the Gregorian tones : see GREGORIAN CHANT. The canticles are sung to rhythmical music of a more elaborated character, in which form they are technically named 'Services.' The lessons, previous to the last revision (1661) of the *Book of Common Prayer*, were intoned; since then, the invariable practice has been to read them.

The practice of I. existed among the Jews at a very early period, and there is great probability that the ecclesiastical chant in present use throughout Christendom is but a modification of that which formed part of the ancient Jewish ritual. The eastern and western churches, at variance on most points, are at one on this. Mohammedans also use this mode of prayer; and barbarous tribes (American Indians and South Sea Islanders) are wont to propitiate their false gods in a species of rude chant; all which seems to point to some deeply seated instinct of human nature, and to indicate an intuitive perception of the truth, that a solemn and reverential manner, distinct from his manner of ordinary intercourse with his fellows, befits the creature in his approaches to the Creator. The Lutheran Church and the Church of England have continued the practice, though only to a permissory and non-essential extent. The latter uses it in her cathedral and collegiate churches, and in these vast edifices its advantages over reading are strikingly manifest.

INTORT, *v.* *in-tört'* [L. *intortus*, twined or twisted round—from *in*, in; *torquēō*, I twist]: to twist; to wreath or wind. INTORT'ING, *imp.* INTORT'ED, *pp.* INTOR'SION, *n.* -tör'shün, a bending or twisting.

IN TOTO, *in tö'tō* [L. on the whole]: wholly; entirely.

INTOXICATE, *v.* *in-töks'î-kāt* [mid. L. *intoxicātus*, drugged or poisoned—from *in*, into; L. *toxicūm*, Gr. *toxikon*, a poison in which arrows were dipped—from Gr. *toxōn*, a bow; *toxa*, bow and arrows]: to excite or stupefy with strong drink; to make drunk; to exhilarate with narcotics; to excite to a kind of madness; to infatuate; to elate to enthusiasm. INTOX'ICATING, *imp.*: *ADJ.* inebriating; possessing qualities of making drunk; elating to enthusiasm or frenzy. INTOX'ICATED, *pp.*: *ADJ.* made drunk; excited to enthusiasm or frenzy. INTOXICANT, *n.* *in-töks'î-känt*, that which produces intoxication. INTOX'ICA'TION, *n.* -kā'shün, drunkenness; high mental excitement in which the judgment is obscured; an elation of the mind which causes a kind of delirium or madness.—*SYN.* of 'intoxication': inebriation; inebriety; ebriety; infatuation; delirium.

INTOXICATION.

INTOXICATION: drunkenness. Whether induced by fermented liquors or by distilled spirits, it is through the alcohol contained in either that the effects of I. ensue. These may be considered under two heads: 1. As they immediately manifest themselves during a single act of I.; and, 2. As they gradually arise through the frequent repetition of the act. The one refers to the state of drunkenness simply, the other to the habit (Intemperance).

The effects of alcohol, in a single act of I., vary according to the way in which the spirit has been taken. If swallowed rapidly, in large quantities or in a concentrated form, the agency is that of a powerful narcotic poison. The mode of action here is partly through a direct impression by the alcohol on the nerves of the stomach, and partly by its absorption into the blood, and its transmission thus to the brain, which is proved to take place with great rapidity. The individual falls into a deep stupor, from which it is impossible to rouse him. The face is ordinarily livid, with a swollen aspect, but sometimes it is ghastly pale. The skin is covered with chilly damps; the pulse is feeble, or perhaps wholly imperceptible; the breathing is slow and weak, though sometimes laborious and snorting; the eyes are rolled upward, with contracted or, occasionally, dilated pupils; the jaws are clenched, and there are frequently convulsions. Where death follows, it may ensue in a few minutes, or after a period varying from a single hour to a day. Where the quantity taken is swallowed more slowly, as in ordinary drinking, the consequences are those familiarly known as characterizing a fit of drunkenness, and are the product of the more gradual and less excessive absorption. The first effect is that of a feeling of well-being, diffused over the body, and imparted to the mind. This gradually leads to exhilaration, thence to boisterous mirth and loquacity, attended at first by a swift transition and vivacity of the ideas, but specially lapsing into indistinctness and confusion. In the increasing whirl of excitement, the individual loses all sense of prudence and self-government, betrays himself by his indiscretions, provokes pity and ridicule by his follies, or incurs danger by his recklessness. With this mental condition, the flushed face, flashing eye, and throbbing brain show, at first, the corresponding state of excitement of the bodily functions; while, with the subsequent confusion of thought, the reeling gait and the look of stolid incomprehension denote the enthralment that has followed. In a further stage, the memory fails, the individual munders and mumbles in his speech, and the surrounding objects, recently seen imperfectly and misapprehended, wholly cease to impress him. At length, amid other loathsome concomitants, he sinks powerless and stupor intervenes, from which he awakens to consciousness after an indefinite number of hours; but then usually to suffer from qualms of sickness and other feelings of pain and depression, entailed upon him by a natural law as the reaction from his excess, and dispelled only after a still longer interval. The outline of the effects may vary. With some, the pro-

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gress of a fit of drunkenness is never attended by hilarity or other conspicuous excitement, and a dreamy and subdued forgetfulness seems all that is produced or that is sought for. With some, even, it leads to a state of querulousness or of unreasoning melancholy. With others the condition is one of furious madness, hesitating at no extreme of violence and outrage.

It is chiefly to the after-effects of the paroxysm that we are to trace the original growth and ultimate inveteracy of the drunken habit. The uneasy sensations of depression, following the excitement of the previous debauch, are sought to be relieved by a fresh recurrence to the stimulant; thus a morbid appetite is created which craves its relief, and finds it, in the renewed administration of spirituous drinks, just as the natural appetite of hunger develops those sharp disquietudes that are allayed by food. This morbid appetite, so far as it is morbid, may itself be regarded and treated as a disease. But the general health shows ultimately signs of a more deep injury. The cheeks begin to have a bloated and flabby look, with a complexion that either wears a peculiar pallor, or verges into shades of purple, while the nose not rarely presents a tinge of crimson. The appetite fails, the digestion is impaired, the sleep is disturbed, and the vigor of frame and capacity for exertion sink accordingly, the limbs often aching and trembling, and the heart drooping, with a miserable feeling of nervous exhaustion. Even prior to this, the drunkard is often liable to those minor illusions which end in the full development of what is known as the drunkard's delirium, or *delirium tremens*, a form of temporary insanity characterized by a state of abject terror, with shaking of the limbs, the sufferer fancying he is surrounded with monstrous phantasms, or that he is devoted otherwise to horrors, disasters, or crimes. One effect, and a leading one, of the customary presence of alcohol in the blood of the drinker, is to reduce the vitality of that fluid, so that it tends to sustain only the lowest forms of nutrition and animalization, and deposits, in great part, merely an inert fat within those organs where it should minister to the growth and maintenance of a delicate construction, destined for uses essential to life. Hence come fatty deposits, or changes of higher structures into fat, in the heart, the liver, and in the blood-vessels, the coats of the last becoming easily ruptured. Hence, liability to diseases of the heart and of the liver often followed by dropsies, or to affections of the other intestines, or to attacks of apoplexy and palsy. If not cut off abruptly in his career, the life of the drunkard becomes one long malady toward its close, the final condition being usually one of imbecility of mind and body, yet with throes of suffering to the last. It has been authoritatively shown that, while the average expectation of future life to the temperate man at the age of 50 may be reckoned at 20 years, that of the drunkard at the same age is only four years. Again, between the ages of 21 and 30, the deaths among drunkards have been found to be more than five times, and be-

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tween 31 and 50, more than four times what occur among the general community at the like ages. See **DIPSOMANIA: DELIRIUM TREMENS: DELIRIUM EBRIOSUM: DELIRIUM NERVOSUM.**

INTOXICATION, or DRUNKENNESS, is, in law, no excuse for any wrong done by the drunken party. Crimes committed in a state of drunkenness are punishable in the same way as if the actor were sober, though it is discretionary in the court to mitigate the sentence. As regards contracts entered into by a drunken party, there is no peculiarity, unless the fact of drunkenness was taken advantage of by the sober party, in which case it lies on the drunken party to prove this. Cases may no doubt arise where the drunkenness may be an element of fraud, and so the contract or deed may be rescinded or set aside. The mere act or state of drunkenness, when privately indulged in, is not an offense against the law; but if it be shown in public, it may become so. Local acts impose various penalties. See **TOTAL ABSTINENCE.**

INTRA, *in'tră:* a Latin prefix signifying 'within; on the inside; interior.'

INTRACARPELLARY, a. *in'tră-kâr'pěl-lér-ĭ* [*intra*, within, and *carpellary*]: in *bot.*, among or interior to the carpels.

INTRACELLULAR, a. *in'tră-sěl'ū-lér* [*intra*, within, and *cellular*]: within cells—applied to the formation of cells within cells; also called free-cell formation.

INTRACTABLE, a. *in-trăk'tă-bl* [OF. *intractable*—from L. *intractabilis*, unmanageable—from *in*, not; *tracto*, I draw or drag: F. *intraitable*]: that cannot be governed or managed; stubborn; obstinate; not to be taught. **INTRAC'TABLY,** ad. *-blĭ*. **INTRAC'TABIL'ITY,** n. *-bĭl'ĭ-tĭ*, or **INTRAC'TABLENESS,** n. *-bl-nēs*, quality of being ungovernable, obstinacy.—**SYN.** of 'intractable': perverse; cross; refractory; indocile; unteachable; violent; ungovernable; headstrong; unruly; unmanageable; untamed.

INTRADOS, n. *in-tră'dōs* [F. *intrados*, the concave part of a vault—from L. *intra*, within; F. *dos*, L. *dorsum*, the back]: in *arch.*, the inner and lower line or soffit of an arch; the upper or outer curve being called the *extrados*: see **ARCH.**

INTRAFOLIACEOUS, a. *in'tră-fō'li-ă'shūs* [L. *intra*, within; *fōliūm*, a leaf]: in *bot.*, situated within the axil of a leaf so as to stand between the leaf and the stem.

INTRALOBULAR, a. *in'tră-lōb'ū-lér* [*intra*, within, and *lobular*]: within lobules or little lobes.

INTRAMURAL, a. *in'tră-mūr'ăl* [L. *intra*, within; *mūrālis*, mural—from *mūrūs*, a wall]: within the walls of a city; opposed to *extramural*, beyond the walls.

INTRANQUILLITY, n. *in'trăn-kwĭl'ĭ-tĭ* [*in*, not, and *tranquillity*]: inquietness; want of rest.

INTRANSIENT, a. *in-trăn'shĕnt* [*in*, not, and *transient*]: not passing suddenly away.

INTRANSIGENTES—INTRENCH.

INTRANSIGENTES, n. plu. *in-trăns'î-jěn'têz* [F. *intransigeant*, who refuses all terms—from Sp. *intransigentes*, irreconcilables—from *in*, not; *transigir*, to settle a dispute amicably]: in *F.*, *Sp.*, and *It.* *political parties*, extreme radical republicans; the extreme left; extreme radicalism; the party of irreconcilables; in *Spain*, the I. combined with the Internationals in an extreme communistic movement of insurrection, 1873, June, against the federal republic.

INTRANSITIVE, a. *in-trăns'î-tiv* [mid. L. *intransitivus*, intransitive—from L. *in*, not; *transitus*, a passing over, a passage: *It.* *intransitivo*; F. *intransitif*, intransitive]: in *gram.*, denoting a verb whose action does not pass over to or affect an object—as, *I sleep, I run, I stand.* **INTRANSITIVELY**, ad. *-tî.*

IN TRANSITU, phrase, *in trăn'sî-tû* [L.]: in the act or state of passing from one place to another; in transit, as, the goods were lost *in transitu*.

INTRANSMISSIBLE, a. *in'trăns-mîs'sî-bl* [*in*, not, and *transmissible*]; that cannot be transmitted.

INTRANSUTABLE, a. *in'trăns-mû'tă-bl* [*in*, not, and *transmutable*]: that cannot be changed into another substance. **IN'TRANSMUTABILITY**, n. *-bîl'î-tî.*

INTRANT, a. *in'trăn'* [L. *intran'tem*, walking into or within: *It.* *intrante*; F. *entrant*]: entering; making entrance.

INTRAP: see **ENTRAP**.

INTRAPETIOLAR, a. *in-tra-pět'î-ô'lér*: in *bot.*, situated between the petiole and the stem; not the same as interpetiolar with which it is often confounded.

INTRARIOUS, a. *in-tră'rî-ûs* [L. *intra*, within]: in *bot.*, applied to the embryo when it is surrounded by the perisperm on all sides except its radicular extremity.

INTRA-UTERINE, a. *in'tră-û'tér-in* [*intra*, within, and *uterine*]: within the uterus or womb.

INTREASURE, v. *in-trězh'ûr* [*in*, into, and *treasure*]: in *OE.*, to lay up, as in a treasury: also spelled **ENTREASURE**.

INTREAT, v. *in-trět'* [*in*, into, and *treat*]: to solicit; to importune: also spelled **ENTREAT**.

INTRENCH, v. *in-trěns'h'* [*in*, and *trench*: F. *trancher*, to cut off]: to dig or cut a ditch round a place; to fortify with ditch or parapet; to construct hastily-thrown-up works to strengthen a force in position in the field; to cut off part of what belongs to another; to encroach or invade, as on rights or prerogatives—followed by *on*; in *OE.*, to furrow. **INTRENCH'ING**, imp. **INTRENCH'ED**, pp. *-trěnsht'*. **INTRENCH'MENT**, n. *-měnt*, a ditch and parapet for protection. **INTRENCHANT**, a. *in-trěns'h'ănt*, in *OE.*, not cutting; not cut; not to be divided. **INTRENCHED CAMP**, the large space of ground occupied by an entire army, or a large body of troops, surrounded by works of fortification: also spelled **ENTRENCH** and **ENTRENCHMENT**.

INTRENCHMENT—INTRODUCE.

INTRENCHMENT, in Fortification: in a general sense any work, consisting of not less than a parapet and a ditch, which fortifies a post against the attack of an enemy. As a means of prolonging the defense in a regular work of permanent fortification, intrenchments are made in various parts, to which the defenders successively retire when driven in from forward works. Bastions are ordinarily intrenched at the gorge by a breastwork and ditch, forming either a re-entering angle or a small front of fortification. A cavalier, with a ditch, is also an intrenchment. An army in the field often strengthens its position by intrenchments, as by a *continual line* of parapet and ditch, broken into redans and curtains, or by a *line with intervals*, consisting of detached works of more or less pretension flanking each other. See FORTIFICATION.

INTREPID, a. *in-trép'íd* [F. *intrépide*—from L. *intrépídus*, undaunted, fearless—from *in*, not; *trepídō*, I tremble at through fear: It. *intrepido*]: fearless; bold; brave; undaunted; not influenced by fear. **INTREPIDLY**, ad. *-lǐ*. **INTREPIDITY**, n. *in'trě-píd' i-ti*, fearlessness; bravery in danger; undaunted courage.—**SYN.** of 'intrepidity': bravery; gallantry; valor; fortitude; courage; heroism; fearlessness; resoluteness; boldness.

INTRICATE, a. *in'trī-kāt* [L. *intrīcātus*, perplexed, embarrassed—from *in*, in; *trīcor*, I make or start difficulties, I baffle—from *trīcā*, hindrances, wiles: It. *intricato*]: entangled; involved; complicated; obscure. **INTRICATELY**, ad. *-lǐ*. **INTRICATENESS**, n., or **INTRICACY**, n. *in'trī-kā-sǐ*, state of being entangled; perplexity; complication.—**SYN.** of 'intricacy': complexity; involution; entanglement;—of 'intricate': perplexed; complex; complicated; darkened.

INTRIGUE, n. *in-trēg'* [F. *intrigue*—from It. *intrigo*, intrigue—from L. *intrīcō*, I perplex—from *trīcā*, hindrances (see INTRICATE)]: a plot or scheme of a private or party kind engaged in by several persons; a love-affair, usually illicit; the plot of a poem or play: V. to form a complicated plot or scheme; to carry on an illicit love; to plot secretly. **INTRIGUING**, imp. *-trē gǐng*: **ADJ.** given to secret plotting or scheming. **INTRIGUED'**, pp. *-trēgd'*. **INTRIGUINGLY**, ad. *-lǐ*. **INTRIGUER**, n. *-gér*, one who.

INTRINSIC, a. *in-trīn'sīk*, or **INTRIN'SICAL**, a. *-sǐ-kāl* [L. *intrīnsecus*, on the inner side—from *intra*, within; *secus*, by, near: It. *intrinseco*; F. *intrinsèque*, intrinsic]: true; genuine; real; inherent; not merely apparent or accidental. **INTRIN'SICALLY**, ad. *-lǐ*. **INTRINSCATE**, a. *in-trīn'sī-kāt*, in *OE.*, entangled; perplexed.—**SYN.** of 'intrinsic': inward; internal; essential; in *OE.*, intimate; familiar.

INTRO, *in'trō*: a Latin prefix signifying 'within; into; in.'

INTRODUCE, v. *in'trō-dūs'* [L. *intrōducēre*, to lead or bring into—from *intro*, within; *dūcō*, I lead; *ductus*, led: F. *introduire*]: to lead, conduct, or bring in; to bring into acquaintance; to bring into notice; to make known; to import. **INTRODUCING**, imp. **INTRODUCED'**, pp. *-dūst*.

INTRODUCTION—INTROSPECT.

IN'TRODU'CER, n. -dū'sér, one who. IN'TRODUC'TION, n. -dūk'shūn [F.—L.]: the act of introducing; the making people known to one another; the opening or preliminary part of a thing, as of a speech, a discourse, or a book; the bringing in something fresh. IN'TRODUC'TIVE, a. -dūk'tiv, serving to introduce. IN'TRODUC'TIVELY, ad. -lì. IN'TRODUC'TORY, a. -tér-ĭ, serving to introduce; preliminary; preparatory. IN'TRODUC'TORILY, ad. -ĭ-lì, by way of introduction.—SYN. of 'introduce': to bring in; conduct in; usher in; bring into; insert; present; open; begin.

INTRODUCTION, in Music: a kind of preface or prelude to a the following movement. Formerly, the I. was found only in large musical works, such as symphonies, rondo, overtures, oratorios, etc.; but now it is found in every fantasia, polonaise, waltz, etc., on the principle that it is considered abrupt to begin all at once, without preparing the audience for what is to come. In a stricter sense, I. is applied to the piece of music with which an opera begins, and which immediately follows the overture. In some cases, the overture and I. are united, the composition going on without any formal pause, as in Gluck's *Iphigénie en Tauride*, Mozart's *Idomeneo* and *Don Giovanni*. As the overture, which contains a harmonical sketch of the opera, should make a permanent impression on the audience, the custom of uniting it with the I. has very properly been discontinued, and the I. is treated as an independent movement.

INTROIT, n. ĭn-troyt' or ĭn'trō-ĭt [F. *introit*, an entrance, *introit*—from L. *intro'itūs*, a going in, an entrance—from *intro*, within; *ĕō*, I go]: in the R. Cath. Chh., etc., a psalm or passage of Scripture sung or chanted while the priest enters the chancel]: a musical composition appropriate for such an occasion.

INTROMISSION, n. ĭn'trō-mĭsh'ūn [F. *intromission*—from L. *intrōmis'siōnem*—from *intrōmissus*, sent inside—from *intro*, within; *mitto*, I send (see INTROMIT)]: the act of introducing one body into another: insertion; in *Scot. law*, assumption of legal authority to deal with another's property; management of property belonging to another.

INTROMIT, v. ĭn'trō-mĭt' [L. *intrōmit'tere*, to send in or within—from *intro*, within; *mitto*, I send]: to send in; to admit; to allow to enter; in *Scot.*, to meddle with or manage the affairs of others. IN'TROMIT'TING, imp. IN'TROMIT'TED, pp.

INTROORSE, a. ĭn-trōrs' [L. *introrsum*, within]: in bot., turned inward or toward the axis of the part to which it is attached—applied to anthers which open on the side next the pistil.

INTROSPECT, v. ĭn'trō-spĕkt' [L. *introspectus*, looked into and examined attentively—from *intro*, within; *spĕciō*, I look]: to look into or within; to view the inside. IN'TROSPECT'ING, imp. IN'TROSPECT'ED, pp. IN'TROSPEC'TION, n. -spĕk'shūn [L. *intrōspectiōnem*, a looking into]: internal view; a view of the interior. IN'TROSPEC'TIVE, a. -spĕk'tiv, looking within.

INTROVERT—INTUSE.

INTROVERT, v. *in'trō-vert'* [L. *intro*, within; *verto*, I turn: It. *introvertere*]: to turn inward. **IN'TROVERT'ING**, imp. **IN'TROVERT'ED**, pp. turned inward. **IN'TROVER'SION**, n. *-vēr'shūn* [L. *versus*, turned]: the act of introverting.

INTRUDE, v. *in-trōd'* [L. *intrūdĕrĕ*, to thrust into a place—from *in*, into; *trūdō*, I thrust or push: It. *intrudere*]: to force or thrust one's self in; to enter into without right or welcome, as into a house or company; to encroach; to trespass. **INTRU'DING**, imp. **INTRU'DED**, pp. **INTRU'DER**, n. *-dĕr*, one who thrusts himself in without right or invitation. **INTRUSION**, n. *in-trō'zhūn* [F. *intrusion*—from L. *intrūsūs*, thrust in]: the action of thrusting in, or of entering without invitation, right, or welcome; encroachment; in *Scotch law*, trespass on lands. **INTRU'SIVE**, a. *-sĭv*, apt to intrude; entering without right or welcome. **INTRU'SIVELY**, ad. *-lĭ*. **INTRU'SIVENESS**, n. *-nĕs*, quality of being intrusive; the act of entering without invitation. **INTRU'SIONIST**, n. *-zhūn-ĭst*, one who makes an entrance without right, or without welcome. **INTRUSIVE ROCKS**, in *geol.*, applied to those igneous rocks which seem to have thrust themselves, while in a state of fusion, between the beds of the stratified formations.—**SYN.** of 'intrude': to obtrude; infringe; intrench; thrust in; enter; force in; cast in.

INTRUSION: see under **INTRUDE**.

INTRUST, v. *in-trŭst'*, or **ENTRUST'** [*in*, in, and *trust*]: to confide to the care of; to commit to the fidelity of another. **INTRUST'ING**, imp. **INTRUST'ED**, pp.—**SYN.** of 'intrust': to commit; confide; consign.

INTUITION, n. *in'tū-ĭsh-ūn* [F. *intuition*; It. *intuizione*, intuition—from L. *intūitiōnem*—from *intu'itūs*, a beholding, a view—from *in*, into; *tūcōr*, I look at]: the act or power of the mind by which it at once perceives the truth of a thing without argument or explanation; any object or truth discerned by the mind without media of any definable kind. *Instinct* is usually and properly applied to the corresponding act or power concerning the well-being and continuation of the *animal* life; though no fixed and clear line of division is recognized between Intuition and Instinct. See **INSTINCT**: **COMMON SENSE**, **PHILOSOPHY OF**. **INTU'ITIVE**, a. *-ĭ-tĭv*, perceived or known at once by the mind without argument or testimony; having the power of at once seeing clearly. **INTU'ITIVELY**, ad. *-lĭ*, by immediate perception; without reasoning.

INTUMESCE, v. *in'tū-mĕs'* [L. *intŭmes'cĕrĕ*, to begin to swell—from *in*, in; *tŭmes'cō*, I swell up]: to enlarge or expand with heat; to swell or bubble up under the action of the blow-pipe, as certain minerals do. **IN'TUMES'ING**, imp. **IN'TUMESC'D**, pp. *-mĕst'*. **IN'TUMES'ENCE**, n. *-sĕns* [F.—L.]: a swelling; a swelling with bubbles: a tumor. **IN'TUMES'CENT**, a. *-sĕnt*, swelling up; expanding.

INTUSE, n. *in-tŭs'* [L. *in*, into; *tŭsŭs*, beaten or pounded]: in *OE.*, a bruise.

INTUSSUSCEPTION—INUNDATE.

INTUSSUSCEPTION, n. *in'tūs-sūs-sēp'shŭn* [F. *intus-susception*—from L. *intus*, within; *suscep'tiōnem*, an undertaking; *susceptus*, taken or caught up]: the reception of one part within another, as of a sword in a sheath; as applied to the bowels, it expresses the slipping of one portion of the intestines into, and constriction of another; the act of taking foreign matter into a living body; the growth of a cell-wall by taking up new matter throughout, instead of laying it on by opposition. **INTUSSUSCEPTED**, a. *-sēp'tēd*, received into, as a sword into a sheath.

INTUSSUSCEPTION, *in'tūs-sūs-sēp'shŭn*, or **INVAGINATION**, *in-vāj-ĭ-nā'shŭn*: partial displacement of the bowel in which one portion of it passes into the portion immediately adjacent to it, just as one part of the finger of a glove is sometimes pulled into an adjacent part in the act of withdrawing the hand (see **INVAGINATION**). In this case, the contained portion of intestine is liable to be nipped and strangulated by the portion which contains it, and all the danger of *Hernia* (q.v.) results, with far less chance of successful interference on the part of the surgeon or physician. It is one of the most frequent and fatal causes of obstruction of the bowels. The extent of the I. may vary from a few lines to a foot or more. Even when inflammation is set up, the affection, though in the highest degree perilous, is not of necessity fatal. The invaginated portion mortifies and sloughs, while adhesion is established between the peritoneal surfaces of the upper and lower portions at their place of junction, so that the continuity of the tube is preserved, though a portion may be destroyed. If the patient is strong enough to bear the shock of the inflammation, gangrene, sloughing, etc., a complete recovery ensues.

INTWINE, v.: see **ENTWINE**.

INTWIST, v. *in-twist'*, or **ENTWIST'** [*in*, into, and *twist*]: to twist together; to interweave. **INTWIST'ING**, imp. **INTWIST'ED**, pp.

INULINE, or **INULIN**, n. *in'ū-lĭn* [F. *inuline*; It. *inulina*—from L. *inŭlā*, the plant elecampane]: white, crystalline, amylaceous matter, a variety of starch found in the root of a plant called *Inŭlā*; also found in dandelion, chicory, and other plants; the *elecampane* (q.v.) is the *Inŭlā Helēnĭŭm*, ord. *Compositæ*.

INUMBRATE, v. *in-ŭm'brāt* [L. *inumbrātus*, having a shade or shadow cast upon—from *in*, into; *umbra*, a shadow]: to cast a shadow or shade upon; to shade. **INUM'BRATING**, imp. **INUM'BRATED**, pp.

INUNCTION, n. *in-ŭngk'shŭn* [L. *in*, in; *unctus*, smeared]: the act of rubbing into a part of the surface of the body an ointment containing some remedial agent.

INUNDATE, v. *in-ŭn'dāt* [L. *inundātus*, overflowed—from *in*, into; *unda*, a wave]: to overflow or deluge with water; to cover with water; to fill with abundance. **INUN'DATING**, imp. **INUN'DATED**, pp.: **ADJ.** overflowed. **IN'UNDA'TION**, n. *-dā'shŭn* [F. *inondation*]: an overflow with

INUNDATIONS.

water or other fluid; a flood; a rising and spreading of water over low grounds.—SYN. of 'inundate': to deluge; overflow; drown; flood; overwhelm; fill.

INUNDA'TIONS: floods caused usually by the overflow of a river or the ocean, sometimes by the giving way of a dam or other barrier. Since the dawn of history no century and scarcely any large country have been free from floods. The region of the Nile river in Egypt, and of the Hoang-Ho, or Yellow River, in China, have suffered most from this cause; and the Nile stands alone as at once a terribly destructive and a beneficial agent, for its overflows have not only irrigated the surrounding dry country, but greatly enriched it by spreading over it the fertilizing sediment collected and conveyed in the stream. In recent years sanitary science has greatly reduced the danger of pestilence that always follow a great flood, and that formerly was often as destructive to human life as the floods themselves. The following are some of the most noted 1. of record: 245, the sea swept over Lincolnshire, Eng., and submerged thousands of acres; 353, a flood in Cheshire, Eng., destroyed 3,000 lives and a great number of cattle; 738, an overflow of the Clyde drowned 400 families in Glasgow; 1014, a number of sea-port towns of England and the Netherlands were destroyed; 1100, the coast of Kent, Eng., was deluged and the Goodwin Sands bank formed by the sea; 1108, Flanders was submerged by the sea, and the town and harbor of Ostend completely covered; 1134, a large part of Flanders was again submerged; 1164, a considerable part of the coast of Friesland was swallowed up; 1170, many miles of country in the n. part of Holland were engulfed with great loss of life; 1219, the breaking of the dikes along the Zuyder Zee caused great destruction of life and property; 1277, 44 villages in Holland were destroyed; 1282, 72 towns and villages in Holland were submerged and 100,000 persons drowned; 1287, another breaking of the dikes caused a loss of 80,000 lives; 1362, 30 villages on the coast of Nordstrand were destroyed; 1377, 50 miles of territory and 72 villages in Holland were swept away and the course of the Maas and Rhine rivers changed; 1421, by the breaking of the dike at Dort 10,000 people in the town and 100,000 in the vicinity were drowned; 1530, a general failure of the dikes caused an overflow of the low lands, and a loss of life estimated at 400,000, and of property in proportion; 1570, Antwerp, Bruges, Hamburg, Rotterdam, and Amsterdam were submerged and 30,000 inhabitants drowned; 1617, 50,000 persons were drowned in a flood in Catalonia, Spain; 1634, a flood swept away several villages on the Nordland coast of Denmark, and drowned 11,038 people and 66,330 cattle, and 10,828 people and 90,000 cattle were drowned at Hamburg, Bremen, and Oldenburg; 1717, the 'Christmas' flood along the entire n. coast and in England totally destroyed 5,000 dwellings, and partially 3,500 more; 1787, mountain torrents drowned 2,000 persons in Navarre, France; 1811, 24 villages near Presburg and nearly all their inhabitants were swept away by an overflow of the Dan-

INUNDATIONS.

ube; 1813, large provinces of Austria and Poland were flooded and many lives lost (6,000 in Silesia, and 4,000 in Poland), and 2,000 Turkish soldiers on an island near Widdin were drowned by a sudden overflow of the Danube; 1816, the overflow of the Vistula river laid 119 German villages under water, and caused great loss of life and property; 1829, the same river broke through the dike at Dantzic, drowned a large number of people, and destroyed 4,000 dwellings and 10,000 cattle; 1830, an overflow of the Danube at Vienna flooded the houses of 50,000 inhabitants; 1833, 10,000 houses were swept away, and 1,000 persons drowned in Canton alone during the great Oct. flood; 1840, a rising of the Saone river, France, and the bursting of its banks, caused 60,000 acres to be submerged and many houses destroyed in Lyons, Avignon, La Guillotière, Voise, Marseilles, and Nismes; 1846, by the Loire flooding the centre and s.w. of France, \$20,000,000 of damage was sustained; 1849, 160 squares and 1,600 buildings were flooded in New Orleans; 1852, the Hoang-Ho river in China burst its banks, cut a new bed into the Gulf of Pechili, and wrought losses beyond the facilities of the authorities to estimate even approximately; 1855, Hamburg was half submerged and suffered enormous property damage; 1861, Bengal, India, suffered great loss of life and property by a deluge in its most fertile districts, and famine and pestilence followed; 1866, the n. of England was visited extensively by floods; 1870, Rome, Italy, similarly suffered great loss; 1872, the n. portions of Italy were visited by floods that caused great damage and loss of life; 1874, the bursting of a badly constructed dam caused the destruction of several villages in the valley of Mill river, Mass., and loss of 144 lives; and 220 lives were lost by an overflow of rivers in w. Penn., caused by unusual rains; 1875, the midland and western counties of England were partially submerged with considerable loss of life; 1,000 persons were drowned near Toulouse, France, by the rising of the Gironne, and 20,000 people were rendered homeless by floods in India; 1876, destructive floods occurred in France and Holland; 1882, many persons were drowned and much property destroyed by overflows in the Miss. and O. valleys; 1887, Oct., the Hoang-Ho river in China again broke its banks, deserted its natural bed, spread over a thickly populated plain, cut an entirely new road to the sea, washed away 300 villages, and submerged the lands around 300 more between Cheng-Chou and Chungmon, submerged more than 1,500 villages s. of Kaifeng, rendered 2,000,000 people homeless, and caused a loss of life estimated from 1,500,000 to 7,000,000; 1889 (May 31), the giving way of the Stony Creek dam in the Conemaugh Valley, Penn., caused the total destruction of the city of Johnstown (q.v.) and several neighboring towns, and caused a loss of about 5,000 lives, and more than \$20,000,000 of property; (July 22) the Hoang-Ho river burst its banks in the province of Shan-Tung, cut a breach 2,000 ft. long, submerged 10 entire districts, and caused a loss of life 'too great to be counted,' and (Aug. 20) the Kinokuni river in Japan rose

INURE—INVAGINATE.

18 ft. above its normal level, washed away the village of Iwahashi and 48 hamlets, and drowned 10,000 people in the city of Wakayamo and in the districts of Minami-Muro, Higashi-Muro, and Nishi-Muro, 1890, Mar. and Apr., the levees of the Mississippi river gave way in many places, and the waters flooded large areas of land in Miss. and La. The worst crevasse was caused by the giving way of the Morgansea, near Bayou Sara, which was built after the flood of 1884 by the federal and state govts. at a cost of nearly \$250,000. See FLOODS IN HISTORY.

INURE, v. *in-ūr'* [OE. *in ure*, in operation—from OF. *œvre* and *eure*, work, operation: Norm. F. *enuer*, to inure: less probable, F. *heur*; OE. *ure*, hap, fortune]: to accustom to by exposure or practice; to habituate. **INU'RING**, imp. **INURED'**, pp. *-ūrd'*, hardened by use. **INUREMENT**, n. habit; custom: rarely spelt **ENURE**.

INURN, v. *in-érn'* [*in*, into, and *urn*]: to inter in an urn, as the ashes of the dead; to bury. **INURN'ING**, imp. **INURNED'**, pp. *-érnd'*.

INUSITATION, n. *in-ū'zī-tā'shūn* [L. *in*, not; *usitātus*, frequently used]: state of being out of use; want of use.

INUTILITY, n. *in'ū-tīl'ī-tī* [F. *inutilité*—from L. *inūtilitatem*, uselessness—from *in*, not; *utilis*, useful, profitable]: the quality of being unprofitable; uselessness.

INUTTERABLE, a.: for **UNUTTERABLE**.

INUUS, or **INNUUS**: genus of apes, to which the Barbary Ape (q.v.) belongs. The Barbary Ape is *I. sylvanus*.

IN VACUO, *in vak'ū-ō* [L. *in*, in; *vacūus*, empty]: an adverbial phrase, denoting 'a void or empty space.'

INVADE, v. *in-vād'* [OF. *invader*—from L. *invādērē*, to go or get into or within—from *in*, into; *vādō*, I go or march: It. *invadere*—*lit.*, to go into]: to enter a country with an armed force, as an enemy; to attack; to encroach on; to violate another's rights. **INVA'DING**, imp. **INVA'DED**, pp. **INVA'DER**, n. *-dēr*, one who. **INVASION**, n. *in-vā'zhūn* [F. *invasion*—from L. *invāsūs*, gone or got into]: the entrance of a hostile army into a country for the purpose of conquest; an attack on the rights of another. **INVA'SIVE**, a. *-siv*, entering with hostile designs; aggressive.—**SYN.** of 'invade': to infringe; encroach; enter; go upon; assail; assault; violate;—of 'invasion': inroad; incursion; irruption; encroachment; entrance; raid.

INVAGINATE, v. *in-vāj'ī-nāt* [L. *in*, into; *vāgīna*, a scabbard, a sheath]: to operate for hernia, in which, after reduction, the skin is thrust into the canal by the finger of the operator, and there retained by sutures, etc., till adhesion ensues. **INVAGINATION**, n. *in-vāj'ī-nā'shūn*, the operation for hernia as above, also sometimes applied to intussusception (q.v.); such a process as turning a hollow body inside out, so that one part is slipped inside the other, as in turning the finger of a glove inside out, or squeezing down half of a hollow ball into the other so as to produce a hemispherical cup; a similar process in the early development of many embryos.

INVALID—INVALIDES.

INVALID, a. *in-vă'lid* [F. *invalid*, weak, invalid—from L. *invalidus*, not strong or vigorous—from *in*, not; *validus*, strong; It. *invalidare*; F. *invalid*, to annul, to make void]: of no force or weight; null; void. **IN VALIDITY**, n. -*lĭd i-tĭ*, want of legal force or of argument; informality. **INVALIDATE**, v. *in-vă'li-dăt*, to weaken or lessen the force of; to overthrow or prove to be of no value, as an argument. **INVALIDATING**, imp. **INVALIDATED**, pp.

INVALID, n. *in'vă-lĭd* [see **INVALID** 1]: a person weak and infirm in health; a worn-out or disabled soldier or sailor: V. to put on the roll of invalids, as an infirm or disabled soldier. **IN'VALID'ING**, imp., returning home or to a more healthful locality. of soldiers, or sailors incapable of active duty by reason of wounds, or the severity of foreign service. One invalided returns to his duty as soon as his health will permit. **IN'VALID'ED**, pp.: **ADJ.** registered as worn out or disabled; laid aside by sickness or infirmity.

INVALIDES, *ăng-va-lĭd* [Fr.]: wounded veterans of the French army, maintained at the expense of the state. The *Hôtel des Invalides* is an establishment in Paris where a number of these old soldiers are quartered. Its chapel contains the tomb of Napoleon I., and attracts many visi-



Hôtel des Invalides.

tors. It was founded by Louis XIV. 1671, and during his reign, and for a long time afterward, was a place of retirement for the aged servants of court favorites as well as for invalided soldiers; but this abuse was ended by St. Germain in Louis XV.'s reign. In 1789, the Hôtel had a

INVALUABLE—INVENT.

revenue of abt. \$330,000; but during the Republic its property was alienated, and the institution supported from the public revenue. The Hôtel can accommodate 5,000 men, and the actual number of inmates is not much below this.

INVALUABLE, a. *in-vàl'ũ-ă-bl* [*in*, intensive, and *valuable*]: precious above estimation; incapable of being valued. **INVALUABLY**, ad. *-blĩ*.

INVASION, n. **INVASIVE**, a.: see under **INVADE**.

INVECTIVE, n. *in-věk'tiv* [F. *invective*, an invective—from mid. L. *invectivus*: L. *invectus*, conveyed or brought into, assaulted—from *in*, into; *věhō*, I carry: Sp. *invectiva*, invective]: a speech or expression intended to cast opprobrium, censure, or reproach on another; unfriendly censure: **ADJ.** abusive; satirical. **INVECTIVELY**, ad. *-lĩ*.—**SYN.** of 'invective': abuse; reproach; censure; accusation; opprobrium.

INVEIGH, v. *in-vā'* [L. *inve'hěre*, to carry into or against—from *in*, into; *věhō*, I carry or convey (see **INVECTIVE**)]: to exclaim or rail against; to utter censure or reproach against; to attack with reproaching words. **INVEIGH'ING**, imp. **INVEIGHED'**, pp. *-vād'*. **INVEIGH'ER**, n. *-ēr*, one who.

INVEIGLE, n. *in-vě'gl* [Norm. F. *enveogler*; OF. *aveugler*, to blind, to hoodwink—from mid. L. *abōc'ũlis*, blind—from L. *ab*, from; *ocũlis*, the eye or sight: It. *invogliare*, to make one willing or desirous]: to entice; to seduce; to wheedle—used only in a bad sense. **INVEIGLING**, imp. *in-vě'glĩng*: **ADJ.** enticing to anything bad. **INVEIGLED**, pp. *-glđ*. **INVEIGLER**, n. *-glēr*, one who. **INVEIGLEMENT**, n. *-gl-měnt*, seduction or enticement to evil or danger.

INVENT, v. *in-věnt'* [F. *inventer*—from mid. L. *inventāre*—from L. *inventus*, lighted upon, found out—from *in*, on; *venīre*, to come, to chance: It. *inventare*—lit., to light upon, to discover]: to find out a new thing; to devise or contrive something not before known; to contrive falsely; to forge or fabricate; in *OE.*, to light on; to meet with. **INVENT'ING**, imp. **INVENTED**, pp. **INVEN'TOR**, or **INVEN'TER**, n. *-tēr*, a discoverer or maker of something new. **INVEN'TION**, n. *-shũn* [F.—L.]: the act or operation of finding out or contriving something new; the article invented (see **PATENT**): forgery; fiction; in the *fine arts*, a term employed to designate the conception or representation of a subject, and generally the whole means by which the artist seeks to portray his thoughts; in *OE.*, a discovery; a device. **INVEN'TIVE**, a. *-tiv* [F. *inventif*]: quick at contriving; ready in expedients. **INVEN'TIVELY**, ad. *-lĩ*. **INVEN'TIVENESS**, n. *-nēs*, the faculty of inventing. **INVENTION OF THE CROSS** [OE. *invention*, discovery]: in *R. Cath. Chh.*, a festival held in honor of the supposed finding of the true cross on which Christ was crucified, by the Empress Helena A.D. 316, on Mount Calvary, celebrated on 3d May. *Note.*—*Discovery* implies observation directed to find out the properties or qualities of a thing existent but unknown,

INVENTORY—INVERNESS.

as the properties of the magnet were *discovered*; while *invention* implies the construction or fabrication of a thing formerly non-existent, as the steam-engine was *invented*.—
 SYN. of 'invent': to find out; contrive; design; devise; frame; discover; excogitate; forge; fabricate; feign; imagine.

INVENTORY, n. *in'ven-tō-rĭ* [mid. L. *inventarium*—from L. *inventus*, past part. of *invenio*—from *in*, on; *venire*, to come, to chance]: detailed account, catalogue, or schedule of a set, group, or collection of objects, as of articles of merchandise, furniture, etc.

INVER-, prefix, *in-vér-* [Gael.]: a confluence of rivers. It is used largely as an element in place-names in Scotland, as Inverness, Inverary, etc.

INVERCARGILL, *in-vér-kár'gĭl*: town in the province of Otago, New Zealand, cap. of the co. of Southland; at the mouth of the New river. Pop. (1881) 4,592.

INVERMINATION, n. *in-vér-mĭ-nā'shĕn* [L. *in*, in; *verminātionem*, the having worms—from *vermināre*, to be troubled with worms]: a diseased state of the bowels caused by worms.

INVERNESS, *in-vér-nēs'*: royal, parliamentary, and municipal burgh, cap. of the co. of I., and chief town of the Highlands of Scotland; at the mouth, and mostly on the right bank, of the river Ness. It is on the Highland railway, 109 m. w.n.w. from Aberdeen. Its environs, well cultivated and beautifully wooded, are almost surrounded by mountains and hills of various heights, forming a picturesque and interesting landscape. I. is a very ancient town, and was one of the Pictish capitals; yet it has quite a modern appearance with wide streets, beautiful suburbs, and fine villas. The first charters of I. as a burgh were granted by King William the Lion (1165–1214). By one of these, it is stipulated that when the king has made a ditch around the burgh, the burgesses shall make a palisade on the edge of the ditch, and keep it in good repair forever. In 1411, the town was burned by Donald, Lord of the Isles, on his way to the battle of Harlaw (q.v.). Macaulay, writing of the year 1689, describes I. as 'a Saxon colony among the Celts, a hive of traders and artisans in the midst of a population of loungers and plunderers, a solitary outpost of civilization in a region of barbarians.' The Castlehill, on the s. side of the town, part of an old sea-terrace, was the site of a castle, which, 1303, was taken by the adherents of King Edward I. of England; but subsequently retaken by those of King Robert Bruce. King James I. is said to have held a parliament in the castle 1427. An iron suspension-bridge, constructed 1855, connects the two parts of the town. In the High Street stands the town-cross, and beside it the famous Clach-na-cuddin, a lozenge-shaped blue slab, formerly regarded as the palladium of the burgh. In the same street, are the Town-hall and Exchange, built 1708. Of the old religious foundations of I., there is little more than tradition. The Dominicans seem to have had a monastery, founded by King Alexander II.,

INVERNESS-SHIRE.

1233. The Franciscans also are believed to have had a convent in the town. Among more modern buildings and foundations, are Raining's School, established 1747; the spire of the old jail, 150 ft. high, built 1791; curiously twisted by the earthquake of 1816, and since readjusted; the Royal Academy, 1792; the County Buildings and jail, on the site of the castle, 1835; St. Andrew's Cathedral, a fine Gothic building, the foundation-stone of which was laid 1866; and a new town-hall, opened 1882. There is a small woolen manufactory, a Workmen's Club and library, several printing establishments, three newspapers, a native bank (the Caledonian), and five other banking-offices. I. has still its four great annual fairs, but the establishment of shops throughout the country has greatly diminished their importance. It has three harbors, built at different times, and a considerable amount of shipping by the Moray Firth and the Caledonian Canal, which connects it with the w. coast. In 1879, there entered 2,859 vessels (309,121 tons), cleared 2,788 vessels (304,302 tons). Pop. (1881) 90,454; (1891) 88,362; (1901) 90,104.

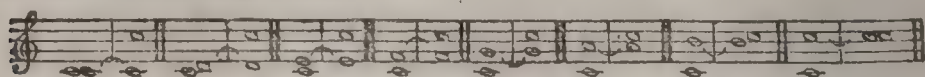
INVERNESS-SHIRE, *in-vér-nēs'sher*: largest county of Scotland, includes Badenoch, Glenroy, and the valley of the Spey on the e.; Lochaber on the s.; Glenelg, Glen Garry, Arisaig, Moydart, and Frasers' County on the w.; Glen Urquhart and Glen Morriston toward the centre. It includes also Strathglass on the n.; and several of the western islands, viz., Skye, Harris, North and South Uist, and Barra, etc. The mainland portion lies between n. lat. $56^{\circ} 49'$ and $57^{\circ} 36'$, and w. long. $3^{\circ} 30'$ and $5^{\circ} 55'$; and is bounded e. by the counties of Aberdeen, Banff, Elgin, and Nairn; s. by Perth and Argyleshire; w. by the Atlantic and Ross-shire; n. by Ross-shire. It measures n.e. to s.w. 85 m., and from n.w. to s.e. 57 m.; 4,256 sq. m., of which more than two-thirds consist of barren heath. The wildest and most mountainous portion is toward the w., comprising a tract 70 m. in extent, designated the *Rough Bounds*. The most extensive moss in Great Britain lies on the s. of Badenoch, where, in the naturally formed wooded islands, large herds of deer find a refuge. These mosses were at one time mostly, if not wholly, covered with trees, some of great magnitude. In Strathspey, three tiers of stocks, one above another, have been found, showing that a succession of forest trees must have grown up, flourished for ages, and then, one after another, disappeared by the work of time or the axe. At present, the natural pines occupy a larger space than in any other county of Britain. There are also many thousand acres of ordinary forest trees. Some mountains attain considerable height. Ben Nevis, now ascertained to be the highest in Great Britain, is 4,406 ft. above sea-level. Cairngorm, partly in this county, is 4,084 ft. high. The geological formation is various; but primary rocks consisting of gneiss, mica-slate, granite, porphyry, and trap rocks, prevail. The most fertile soil of the county rests on the red sandstone in the valley of the Aird, and between the county town and Beaully. There are several lakes of some extent, as Loch

INVERSE—INVERSION.

Ness, Loch Lochy, Loch Laggan, Loch Ericht, and a number of other lochs forming arms of the sea. The principal rivers are the Spey, Lochy, Beauly, Findhorn, Nairn, Ness, Garry, Morriston, and the Foyers (q.v.). The county is divided among 80 or 90 proprietors, a few of whom possess above 100,000 acres. The old valued rent (1674) was £6,099; the valuation for 1880-1 was £322,873, exclusive of railways and canals £20,075. According to the agricultural returns 1881, the total acreage under all kinds of crops, fallow, and grass, was 128,824: 40,018 acres under grain, 19,719 under green crops, 27,882 under clover and grasses under rotation, 40,311 with permanent pasture (exclusive of heath and mountain-land). Of the land under crops, 50 acres were wheat, 8,616 barley, 30,408 oats, 875 rye. Of land under green crops, 8,425 acres were potatoes, 11,121 turnips, 163 vetches, etc. Of live stock, there were 8,917 horses, 52,567 cattle, 686,307 sheep, and 2,815 swine. There are comparatively few antiquities in the county. These consist principally of remains of vitrified forts and ruins of old castles. The battle which decided the fate of the Stuarts was fought 1746, Apr. 16, on Culloden Moor, a few miles from Inverness. The Gaelic language is still generally, but in scarcely any district exclusively, spoken. The constituency returns one member to parliament. Pop. (1881) 17,386; (1891) 20,855; (1901) 21,193.

INVERSE, a. *in vers* or *in' vers* [F. *inverse*—from L. *in-versus*, turned bottom upwards—from *in*, in; *verto*, I turn: Sp. *inverso* (see **INVERT**)]: placed in contrary order; opposed to *direct*; in *bot.*, having a position or mode of attachment the reverse of what is usual. **INVERSELY**, ad. -ly, in an inverted order or manner. **INVER'SION**, n. -shūn [F.—L.]: change of order, so that the last becomes first and the first last; a contrary change of order or position; said of an organ which is completely or partially turned inside out, as the womb. **INVERSE RATIO**, in *arith.* and *alg.*, a ratio when the relation of numbers to each other is reversed—thus we have the *ratio* 3 to 6 expressed by $\frac{3}{6}$ or $\frac{1}{2}$, and the *inverse ratio* of the same numbers is expressed by 6 to 3 or by $\frac{6}{3}$ or 2.

INVERSION, in Music: transposing of one of the two notes of an interval by an octave upward or downward, to a position the reverse of that which it before occupied with respect to the other note; so that if the transposed note was the lower note of the two, it shall now be the higher one, and *vice versâ*. The new interval thus formed takes its name from the complement of the octave: e.g., a unison inverted becomes an octave, a second becomes a seventh, a third becomes a sixth, a fourth becomes a fifth, a fifth becomes a fourth, a sixth becomes a third, a seventh becomes a second, and an octave becomes a unison. The following shows how these arise:



Unison. 2v. 2d. 7th. 3d. 6th. 4th. 5th. 5th. 4th. 6th. 3d. 7th. 2d. 8v. Unison.

INVERT—INVEST.

By I. diminished intervals become augmented, and augmented become diminished; major become minor, and minor become major; but perfect intervals are perfect also when inverted. For I. of chords see CHORD.—An important use is made of the word I. also in reference to a whole passage or phrase: see COUNTER-POINT.

INVERT, v. *in-vért'* [L. *inver'tērē*, to turn bottom upwards—from *in*, in; *verto*, I turn or change: Sp. *invertir*: It. *invertere*]: to turn upside down; to place in a contrary position, direction, or order. INVERT'ING, imp. INVERT'ED, pp.: ADJ. turned to a contrary direction; changed in order; in *bot.*, having the radicle of the embryo pointing to the end of the seed opposite the hilum; having the ovules attached to the top of the ovary. INVERT'EDLY, ad. *-lī*. INVERTED ARCH, an arch of stone or brick with the crown downwards—usually employed in the construction of tunnels.

INVERTEBRATE, a. *in-vér'tě-brāt* [L. *in*, not; *vertēbra*, a joint in the backbone: F. *invertébré*, invertebrate]: without a vertebral column or spinal bone; destitute of a backbone: N. an animal having no spinal bone. INVER'TEBRA'TA, n. plu. *-brā'tā*, or INVERTEBRATE ANIMALS, one of the great divisions of the animal kingdom, in which the animals are destitute of vertebræ or backbones. The division of animals into *Vertebrate* and *Invertebrate* is a natural and unavoidable one, acknowledged in all systems of zoology. But these groups being formed, the one on a positive, and the other on a negative character, are not of equal value in the classification of the animal kingdom. In Cuvier's system the invertebrate animals form three of the great divisions of the animal kingdom—viz., *Mollusca*, *Articulata*, and *Radiata*, each of which, like *Vertebrata*, exhibits a peculiar type of structure. More recent classifications distribute invertebrates into a larger number of separate divisions; see ZOOLOGY, where the groups are *Protozoa*, *Porifera*, *Cœlenterata*, *Vermes*, *Arthropoda*, *Echinodermata*, *Mollusca*, *Tunicata*. Among the lower invertebrates more than among the vertebrate animals, the arrangement into groups must be regarded as at present, largely tentative and provisional; though in the higher departments of invertebrate zoology many of the classes and other groups are very well defined. The organization of some of them, as insects, however different from that of vertebrate animals, is not evidently lower, but exhibits a perfection as admirable as in any of them, while all vital powers are most fully displayed. INVER'TEBRAL, a. sometimes used for INVERTEBRATE.

INVERTIN, n. *in-vért'in*: in chem., the active principle of the yeast plant, obtained by repeatedly washing yeast first with water and then with alcohol. Invertin has the power of inverting cane sugar, but has no action on maltose.

INVEST, v. *in-věst'* [F. *investir*—from L. *investīrē*, to cover with a garment—from *in*, on; *vestis*, a garment: It. *investire*]: to clothe; to dress; to put garments on; to place in possession of office, rank, or dignity; to inclose or sur-

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round, as a city besieged by an enemy; to place or lay out money. INVEST'ING, imp. INVEST'ED, pp. INVEST'IVE, a. -*iv*, clothing; inclosing. INVEST'MENT, n. that in which anything is invested, as money; the act of placing out money to interest or profit in the public funds, in the purchase of shares or property, and the like; the act of surrounding a town, etc., in order to besiege it.—SYN. of 'invest': to adorn; grace; confer; give; endow; inclose; surround; put on; array; bedeck; block up.

INVESTIGATE, v. *in-vēs'tī-gāt* [L. *investigātus*, tracked out, searched or sought after—from *in*, into; *vestigō*, I follow a track; *vestigium*, a track or footstep]: to search, trace, or find out; to examine into with care and accuracy. INVES'TIGATING, imp. INVES'TIGATED, pp. INVES'TIGATOR, n. -*gā-tēr* [F. *investigateur*]: an examiner; one charged to look into anything. INVES'TIGABLE, a. -*gā-bl*, that may be searched out. INVES'TIGA'TION, n. -*gā'shūn* [F.—L.]: the action or process of searching carefully for truth, facts, or principles; careful inquiry to find out what is unknown; a searching inquiry. INVES'TIGATIVE, a. -*gā-tiv*, careful in research. INVES'TIGA'TORY, a. -*tēr-ī*, searching; inquiring into.

INVESTITURE, n. *in-vēs'tī-tūr* [F. *investiture*—from mid L. *investitūra*, investiture—from L. *in*, on; *vestis*, a garment (see INVEST)]: the act or right of giving legal possession; formerly, in Scotch law, act of giving feudal possession of heritable property; in feudal and ecclesiastical history, the act of giving corporal possession of a manor, office, or benefice, accompanied by a certain ceremonial, such as the delivery of a branch, a banner, or an instrument of office, more or less designed to signify the power or authority which it is supposed to convey.

The contest about ecclesiastical investitures is so interwoven with the whole course of mediæval history, that a brief account of its origin and nature is indispensable to understanding many of the most important events of that period. The system of feudal tenure had become so universal that it effected even the land held by ecclesiastics, and attached to most of the higher ecclesiastical dignities, monastic as well as secular. Accordingly, ecclesiastics who, in virtue of the ecclesiastical office which they held, came into possession of the lands attached to such offices, began to be regarded as becoming by the very fact feudatory to the suzerain of these lands; and, as a natural result, the suzerains thought themselves entitled to claim, in reference to these personages, the same rights which they held over the other feudatories of their domains. Among these rights was that of granting solemn investiture. Now, in the case of bishops, abbots, and other church dignitaries, the form of I. consisted in the delivery of a pastoral staff or crosier, and the placing a ring upon the finger; and as these badges of office were emblematic—one of the spiritual care of souls, the other of the espousals, as it were, between the pastor and his church or monastery—the assumption of this right by the lay suzerains became a subject of constant and

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angry complaint on the part of the church. On the part of the suzerains it was replied, that they did not claim to grant by this rite the spiritual powers of the office, their function being solely to grant possession of its temporalities, and of the temporal rank thereto annexed. But the church party urged, that the ceremonial in itself involved the granting of spiritual powers; insomuch that in order to prevent the clergy from electing to a see when vacant, it was the practice of the emperors to take possession of the crosier and ring, until it should be their own pleasure to grant I. to their favorites. The disfavor in which the practice had long been held found its most energetic expression in the person of Gregory VII., who having, 1074, enacted most stringent measures for repression of simony, proceeded, 1075, to condemn, under excommunication, the practice of I. as almost necessarily connected with simony, or leading to it. This prohibition, however, as is observed by Mosheim (ii. 326), regarded I. only in the objectionable form in which it was then practiced, or I. of whatever form, when the office had been obtained simoniacally. But a pope of the same century, Urban II., went further, and (1095) entirely forbade not only lay investiture, but the taking of an oath of fealty to a lay suzerain by an ecclesiastic, even though holding under him by the ordinary feudal tenure. The contest continued during the most of the 11th c. In the beginning of the 12th c., it assumed a new form, the pope, Pascal II., having actually agreed to surrender all the possessions and royalties with which the church had been endowed, and which alone formed the pretext of the claim to I. on the part of the emperor, on condition of the emperor (Henry V.) giving up that claim to investiture. This treaty, however, never had any practical effect; nor was the contest finally adjusted until the celebrated concordat of Worms 1122, in which the emperor agreed to give up the form of I. *with the ring and pastoral staff*, to grant to the clergy the right of free elections, and to restore all the possessions of the Church of Rome which had been seized either by himself or by his father; while the pope, on his part, consented that the elections should be held in the presence of the emperor or his official, but with a right of appeal to the provincial synod; that I. might be given by the emperor, but only *by the touch of the sceptre*; and that the bishops and other church dignitaries should faithfully discharge all the feudal duties which belonged to their principality.

Such was the compact entered into between the contending parties, and for a time it had considerable effect in restraining one class of abuses; but it went only a little way toward eradicating the real evil of simony and corrupt promotion of unworthy candidates for church dignities. Still the principle on which the opposition to I. was founded was almost a necessary part of the mediæval system, and Mosheim (ii. 327) regards it as 'perfectly accordant with the religious principles of the age.' It was, in fact, but one of the many forms in which the spirit of churchmanship has arrayed itself, whether in ancient or

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modern times, against what are called the Erastian tendencies which never fail to develop themselves under the shadow of a state church, no matter what may be its creed or its constitution.

INVESTMENT, *n.*: see under INVEST.

INVETERATE, *a.* *in-vět'ér-āt* [L. *invetērātus*, kept till old or stale—from *in*, into; *vetus*, or *vētērem*, old: It. *inveterato*, inveterate: F. *invétérer*, to become inveterate]: deep seated or rooted; obstinate; obstinate from long continuance. INVETERATELY, *ad.* *-lě*. INVETERACY, *n.* *-ér-ă-sě*, long continuance of anything bad; state of being deep-rooted and firm by time. INVETERATENESS, *n.* long continuance of anything bad.

INVIDIOUS, *a.* *in-vīd'ī-ūs* [L. *invidiōsus*, full of envy or spite—from *invidiā*, envy: It. *invidioso*]: likely to incur or provoke ill-will, envy, or hatred. INVIDIOUSLY, *ad.* *-lě*. INVIDIOUSNESS, *n.* *-něs*, the quality of provoking envy or hatred.—*SYN.* of 'invidious': envious; jealous; suspicious; malignant; hateful.

INVIGORATE, *v.* *in-vīg'ō-rāt* [mid. L. *invigorātus*, strengthened: It. *invigorire*, to strengthen—from L. *in*, in; *vigor*, strength]: to strengthen; to give vigor to; to animate; to enliven; in *OE.*, to enforce: INVIGORATING, *imp.* INVIGORATED, *pp.*: ADJ. strengthened. INVIGORATION, *n.* *-rā'shūn*, the act of invigorating; the state of being strengthened.

INVINCIBLE, *a.* *in-vīn'sī-bl* [F. *invincible*—from mid. L. *invincibilis*; It. *invincibile*, unconquerable—from L. *in*, not; *vinco*, I conquer]: that cannot be conquered or subdued; not to be overcome. INVINCIBLES, Irish secret society, not identical with, though it developed from that of the Fenians, in or prior to 1882. INVINCIBLY, *ad.* *-blě*. INVINCIBLENESS, *n.* *-bl-něs*, or INVINCIBILITY, *n.* *-bīl'ī-tě*, the quality of being unconquerable.

INVIOABLE, *a.* *in-vī'ō-lā-bl* [F. *inviolable*—from L. *inviolābilis*, not to be hurt: It. *inviolabile*—from L. *in*, not; *violō*, I defile, I injure]: not to be profaned or polluted; that ought not to be injured; not to be broken. INVIOABILITY, *n.* *-bīl'ī-tě* [F. *inviolabilité*]: the state or quality of being inviolable. INVIOABLY, *ad.* *-blě*. INVIOATE, *a.* *-ō-lāt* [L. *inviolātus*, uninjured]: uninjured; unprofaned; unbroken; unpolluted.

INVIRILITY, *n.* *in'vī-rīl'ī-tě* [see VIRILE]: absence of manhood or manly character; effeminacy.

INVISIBLE, *a.* *in-vīz'ī-bl* [F. *invisible*—from L. *invisibilis*, hidden from sight—from *in*, not; *vidēō*, I see]: that cannot be seen; not perceptible by sight. INVISIBLY, *ad.* *-blě*. INVISIBILITY, *n.* *-bīl'ī-tě*, or INVISIBLENESS, *n.* *-bl-něs*, state of being invisible.

INVITE, *v.* *in-vīt'* [F. *inviter*—from L. *invītārē*, to ask or request]: to ask to come into or to some place; to request the company of; to ask to do something; to present opportunities; to solicit; to allure; to persuade. INVITING, *imp.*: ADJ. enticing; alluring; tempting. INVITED, *pp.* solicited:

INVOCATE—INVOCATION.

allured. INVI'TER, n. one who. INVI'TINGLY, ad. -ly. INVITATION, n. *in'vī-tī'shūn* [F.—L.]: the act of asking to do some act, or to go to some place. INVITATORY, a. *in-vī-tī-tēr-ī*, using or containing invitation. N. a psalm or hymn inviting to prayer.—SYN. of 'invite': to summon; call; bid; solicit; ask; entice; attract.

INVOCATE, v. *in'vō-kāt* [L. *invocātus*, called on or upon—from *in*, on; *vōcō*, I call: It. *invocare*: F. *invoyer*]: to invoke; to call on with solemnity; to address in prayer; to implore. IN'VOCATING, imp. IN'VOCATED, pp. IN-VOCA'TION, n. -*kā'shūn* [F.—L.]: the act of addressing God in prayer for assistance and protection; a form of call so made.

INVOCA'TION OF ANGELS AND SAINTS: act of addressing prayers to the blessed spirits who are with God, whether the angels or the souls of the just who have been admitted to the happiness of heaven. The practice of addressing prayers to angels, especially to the angel-guardian, to the Virgin Mary, and to other saints, prevails in the Roman, the Greek, the Russo-Greek, and the eastern churches of all the various rites. In the Christian religion, the principle of the unity of God excludes all idea of subordinate deities such as are found in paganism; and all alike, Rom. Catholics as well as Protestants, agree that its very first principles exclude the idea of rendering divine worship, no matter how it may be modified, to any other than the One Infinite Being. But while Protestants carry this principle so far as to exclude every species of religious worship and every form of invocation addressed to angels or saints, as trenching upon God's honor, and irreconcilable with the Scriptures, which hold Him forth as the sole object of worship and the only fountain of mercy, the Rom. Cath. doctrine permits and sanctions a worship (called *douleia*) of the saints, inferior to the supreme worship (*latreia*) offered to God, and an invocation of the saints, not for the purpose of obtaining mercy or grace from themselves directly, but in order to ask their prayers or intercession with God on our behalf. For this doctrine and the analogous practice, they do not advance the direct authority of Scripture (except a few passages which seem to them to imply the intercommunion of the two worlds, as Matt. xiii. 3; Luke xiv. 17; Exod. xxxii. 13), but rely on what to them is equally decisive testimony, viz, the unwritten word of God conveyed by tradition. Origen (Opp. ii. p. 273) speaks of the belief that 'the saints assist us by their prayers' as a doctrine 'doubted by no one.' St. Cyprian, addressing the confessors going to martyrdom, engages by anticipation their prayers in his behalf when they shall have received their heavenly crown (Ep. 60, Dodwell's edition). To the same effect are cited the testimonies of Basil (Opp. ii. 155), Gregory Nazianzen (Opp. i. 288), Gregory of Nyssa (ii. 1017), Ambrose (ii. 200), Chrysostom (iv. 449), and many other Fathers, as well as the liturgies of the various ancient churches, whether of the Roman, the Greek, the Syrian, or the Egyptian rite.

INVOCATION.

On the other hand, Prot. historians, even admitting the full force of these testimonies to the existence of the practice, allege that the practice is an early, but unscriptural addition, dating only from the infusion into the church system of Alexandrian Neo-platonism and Oriental Magianism, which they believe to have left traces even in the so-called orthodox Christianity of the fourth and fifth c. But leaving aside the doctrinal controversy, the fact at least is certain, that in the fourth, and still more in the fifth and following c. the usage was universal; and a curious evidence of its prevalence is furnished by the fact, that the very excess to which it was carried was condemned as a heresy (that of the Collyridians) by those who themselves confessed the lawfulness of the practice when confined within legitimate limits. That similar excesses in the practice, and similar abuses as to the nature and limits of the legitimate invocation of the saints continued through the mediæval period, Rom. Catholics themselves admit, though they allege that such abuses were at all times reprobated by the authentic teaching of the church; and the multiplied devotions to the saints, especially to the Blessed Virgin, the efficacy claimed for them and the extraordinary legends connected with them, and the prominence which the worship had assumed in the church, were among the most fertile themes of invective with the first Reformers. The Council of Trent (25th Sess., *On the Invocation of Saints*) defines very precisely what is the doctrine of the Rom. Cath. Church on this subject. It declares 'that the saints who reign with God offer up their prayers to God for men; that it is good and useful suppliantly to invoke them, and to resort to their prayers, aid, and help, for the purpose of obtaining benefits of God through his son Jesus Christ our Lord who alone is our Redeemer and Savior.' From this decree it is inferred that the Rom. Cath. doctrine on the saints does not prescribe the practice of invoking them as necessary or essential, but only as 'good and useful,' and that what is to be asked of them is not the direct bestowal of grace and mercy, as from themselves, but only their prayers, their assistance, and their help in obtaining benefits from God; and though many forms of prayer in use in the Roman Church bear, especially to a Prot. reader, all the appearance of direct appeals to the saints themselves for the benefits which are implored, yet all Rom. Cath. authorities are unanimous in declaring that these forms of words are to be interpreted, and that, from habitual use, they are so interpreted, even by the most superficially instructed Rom. Catholics, with the understood explanation, that all the power of the saints to assist us consists exclusively in their prayers for us, and seconding our prayers by their own. See Bellarmine, *Controversiæ de Sanctorum Beatitudine*, lib. i. cap. xvii.

Protestants object to the invocation of saints and of angels, that it is without evidence of divine authority, contrary to the whole tenor of Scripture, and derogatory to the mediatorship of Christ. They deny that—even if that part of the Roman doctrine be granted which asserts

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that the prayers *of* departed saints are efficacious for us with God—there is in that fact any bearing on the question of prayers *to* those saints. They ask what reason can be adduced for believing that prayers addressed to saints are even *heard* by them, or that they, not being omnipresent or omniscient, have always a knowledge of the worship addressed to them? They further deny that the prayers addressed to saints—and particularly to the Virgin Mary—are always capable of explanation as merely an asking of their prayers on behalf of those who invoke them, and quote many instances in proof.

INVOICE, n. *in'voys* [It. *avviso*, notice, information; said also to be from *envois*, an OE. plu. of F. *envoi*, OF. *envoy*, a sending, a consignment]: written and priced list or detailed account of goods sent by a merchant to a customer—the invoice being sent with the goods or separately: a bill of parcels: V. to make a written list of goods or property, with their prices, to be forwarded to a purchaser. IN'VOICING, imp. IN'VOICED, pp. *-voyst*. INVOICE-BOOK, the book into which bills and invoices are copied, or into which the originals are posted.

INVOKE, v. *in-vōk'* [F. *invoquer*, to invoke--from L. *invōcō*, I call on or upon--from *in*, on; *vōcō*, I call] (see INVOCATE): to address in prayer; to call for help with earnestness. INVO'KING, imp. INVOKED', pp. *-vōkt'*.

INVOLUCELS, n. *in-vōl'ū-sēls* [F. *involucelle*, an involucl; L. *invōlūcrum*, a wrapper]: in *bot.*, the collection of bractlets surrounding a secondary or partial umbel or flower-head; secondary involucre.

INVOLUCRE, n. *in'vō-lō'kr*, or IN'VOLU'CRUM, n. *-krūm* [F. *involucré*—from L. *invōlūcrum*, a wrapper—from *in*, into; *volvo*, I roll: It. *involucro*]: in *bot.*, group of bracts surrounding flowers in their unexpanded state, and occupying a place on the floral axis beneath them after their expansion. The bracts which form an I. are generally grouped in a whorl. The layer of epidermis covering the spore-cases in ferns are called an involucre. In umbelliferous flowers, there is very commonly an I., not only to the umbel, but to each division of the umbel, or *umbellule*. The former is called the *general involucre*, or simply the *involucre*; the latter are *partial involucre*s, or *involucels*. The cup of the acorn, hazel, chestnut, etc., may be regarded as an involucre. IN'VOLU'CRAL, a. *-lō'krāl*, belonging to the involucre. INVOLU'CREd, a. *-lō'kērd*, having an involucre.

INVOLUNTARY, a. *in-vōl'ūn-tēr-ī* [mid. L. *invōluntāriūs*: *in*, not, and Eng. *voluntary*]: not having will or choice; not proceeding from will or choice. INVOL'UNTAR'ILY, ad. *-tēr'ī-lī*. INVOL'UNTAR'INESS, n.

INVOLUTE, n. *in'vō lōt* [L. *invōlūtūs*, inwrapped, inclosed—from *in*, into; *volvo*, I roll: It. *involutō*, enveloped: F. *involuté*, curling inside]: in *geom.*, the curve traced by any point of a string, when unwrapped under tension from a given curve (see EVOLUTE AND INVOLUTE). INVOLUTE,

INVOLUTION AND EVOLUTION—INWARD.

a., or IN'VOLU'TED, a. in *bot.*, rolled spirally inwards, as leaves. IN'VOLU'TION, n. -lō'shŭn [F.—L.]: the action of folding or rolling in; that which is wrapped round anything; in *arith.* and *alg.*, the raising of a number or quantity to any given power, as if it were folded or rolled on itself (see INVOLUTION AND EVOLUTION): the return of an organ or tissue to its original state, as the womb after having expelled the child. IN'VOLU'TIVE, a. -lō'tiv, in *bot.*, applied to leaves rolled inwards spirally on each side; involute.

INVOLU'TION AND EVOLU'TION, in Arithmetic and Algebra: two operations the converse of each other. The object of Involution is to raise a number to any power, which is effected by continuously multiplying the number by itself till the number of factors is equal to the number designating the power, thus, 2 raised to the *third* power is $2 \times 2 \times 2$, or 8; 7 raised to the *fourth* power is $7 \times 7 \times 7 \times 7$, or 2401, etc. Evolution on the other hand, is the extraction of a root of any number, that is, it is a method for discovering *what* number, when raised to a certain power, will give a certain known number—e.g., the square root of 64 is 8, that is, 8 is the number which, raised to the second power, will give 64; 3 is the fourth root of 81, that is, 3 raised to the fourth power is 81, and so on. The symbols expressive of the two operations are as follows: 5^3 means that 5 is to be raised to the third power; $(7^2)^5$ means that the square or second power of 7 is to be raised to the fifth power; $\sqrt[4]{9}$ or $\sqrt[4]{9}$ or $9^{\frac{1}{4}}$ signifies that the extraction of the second or square root of 9 is required; $\sqrt[4]{256}$ or $256^{\frac{1}{4}}$, that the fourth root of 256 is to be extracted; and so on. I. and E., like multiplication and division, or differentiation and integration, differ in the extent of their application; the former, or direct operation, can always be completed, while there are numberless cases in which the latter fails to express the result with perfect accuracy.

INVOLVE, v. *in-vōlv'* [L. *involverē*, to surround, to inwrap—from *in*, in or on; *volvo*, I roll: It. *involvere*: F. *involver*]: *literally*, to surround or inwrap; to comprise; to take in; to implicate; to imply; to entangle; to plunge or overwhelm in, as debt; to embarrass; to raise a number or quantity to any given power. INVOLV'ING, imp. INVOLVED', pp. -vōlv'd'. INVOLVE'MENT, n. -vōlv'mēnt, state of being involved.—SYN. of 'involve': to inwrap; cover; entwist; join; catch; conjoin; complicate; blend; mingle; embarrass; overwhelm.

INVULNERABLE, a. *in-vŭl'nēr-ă-bl* [F. *invulnérable*—from L. *invul'nērābilis*, not to be wounded—from *in*, not; *vulnērō*, I wound]: that cannot be wounded or maimed; that cannot be pierced or injured. INVUL'NERABLENESS, n. -bl-nēs, or INVUL'NERABIL'ITY, n. -bīl'ī-tī, the quality of being secure from wounds or injury.

INWARD, a. *in'wērd* [AS. *inneweard*, inward—from *inne*, within; *weard*, towards]: internal; placed or being within; domestic; familiar; in *OE.*, seated in the mind.

INWEAVE—IODAMIDES.

IN'WARD, or **IN'WARDS**, ad. -wérdz, towards the inside or centre; in the mind or thoughts. **INWARDLY**, ad. -lǐ, in the inner parts; in the heart or thoughts. **IN'WARDS**, n. plu. -wérdz [AS. *innewearde*, the bowels]: the bowels; the viscera; in *OE.*, for **INWARD**.

INWEAVE, v. ǐn-wēv' [*in*, into, and *weave*]: to intermix or intertwine; to weave together. **INWEAV'ING**, imp. **INWOVE'**, pt. -wōv'. **INWO'VEN**, pp. -wō'vn.

INWRAP, v. ǐn-rāp' [*in*, into, and *wrap*]: to infold; to cover by wrapping; to perplex. **INWRAP'ING**, imp. **INWRAPPED'**, pp. -rāpt'.

INWREATHE, v. ǐn-rēth' [*in*, into, and *wreath*]: to surround or encompass, as with a wreath. **INWREATH'ING**, imp. **INWREATHED'**, pp. -rēthd'.

INWROUGHT, pp. and a. ǐn-rawt' [*in*, into, and *wrought*]: worked in or among other things; adorned with figured work.

IO! int. ī'ō [Gr. *io*]: an exclamation of joy or triumph.

IO: see **PLANETOIDS**.

IO, n. ī'ō: one of the satellites of Jupiter.

IO, ī'ō: in Greek mythology, daughter of Inachus, Jasus, or Pirenes (according to various authorities), who, being enamored of Jupiter, was changed by him into a beautiful heifer to avert the jealousy of Juno. The goddess discovered his secret, set Argus to watch the heifer, and when Mercury destroyed Argus by Jupiter's order, sent a malicious insect to torment her. The heifer wandered in distress to the Nile, where Jupiter restored her. She afterward gave birth to Epaphus and married Telegonus, King of Egypt. Æschylus mentions her in *Prometheus* and *The Suppliants*.

IODAMIDES, n. ǐ-ōd'a-mīds: in chem., NI_3 or NHI_2 : term denoting a number of compounds, mostly of an explosive character, produced by the action of iodine on ammonia; they vary in composition and properties according to the mode of preparation. The product obtained is a brownish-black, soft powder, which in the dry state can scarcely be touched without exploding.

IODINE.

IODINE, n. *ī'ō-dīn* [Gr. *īōdēs*, resembling a violet—from *īōn*, the violet; *eidos*, likeness: F. *iode*, or *iodine*]: an elementary body forming a solid substance of a grayish-black color, obtained from marine plants, sea-water, etc.—Its vapor is of a beautiful violet color, hence the name; one of the halogens, and related therefore to chlorine and bromine. **IODATE**, n. *ī'ō-dāt*, any salt of iodic acid. **IODIC**, a. *ī'ōd'ik*, containing iodine. **IODIDE**, n. *ī'ō-dīd*, a direct compound of iodine with a metal or other substance. **ODOUS**, a. *-dūs*, of or from iodine. **IODISM**, n. *-dīzm*, in *med.*, a morbid condition sometimes resulting from the use of iodine. **IODITE**, n. *ī'ō-dīt*, or **IODIC SILVER**, an ore of silver, consisting of iodide of silver. **IODIUM**, n. *ī'ō-dī-ŭm*, a Latinized form of the word *iodine*.

IODINE (symb. I, equiv. 127); one of a group of four non-metallic elements to which the term Halogens (q.v.) has been applied. At ordinary temperatures, it occurs usually in solid dark-gray glistening scales; it is, however, crystallizable, and sometimes appears as an octahedron with a rhombic base. It is soft, and admits readily of trituration, has the high specific gravity of 4.95, and evolves a peculiar and disagreeable odor, which indicates its great volatility. It fuses at 225°, and at about 350° it boils, and is converted into the purple vapor to which it owes its name; it has an acrid taste, and communicates a brownish-yellow color to the skin. It is very slightly soluble in water, but dissolves readily in watery solutions of iodide of potassium and of hydriodic acid, and in alcohol and ether. I. vapor is the heaviest of all known vapors, its specific gravity being 8.716. It combines directly with phosphorus, sulphur, and the metals. Its behavior with hydrogen is analogous to that of chlorine and bromine (see **HYDROCHLORIC ACID**), but its affinities are weaker than those of the last-named elements. It likewise combines with numerous organic substances, and the compound which it forms with starch is of such an intense blue color, that a solution of starch forms the best test for the presence of free iodine: by means of this test, one part of I. may be detected when dissolved in one million parts of water.

The following are some of the most important I. compounds. With hydrogen, it forms only one compound, *hydriodic acid* (HI), a colorless, pungent acid gas, in most respects analogous with hydrochloric acid. It is obtained by the action of water on teriodide of phosphorus. The soluble iodides of the metals may be obtained by the direct combination of hydriodic acid with the metallic oxides, the resulting compounds being the metallic iodide and water. Some of these are of extreme brilliancy, and others are of great value in medicine; among the latter must be especially mentioned iodide of potassium, iodide of iron, and the iodides of mercury; also see **ODOFORM**.

Iodide of potassium is, next to quinine and morphia, the most important medicine in the pharmacopœia. It crystallizes in colorless cubes, which are sometimes clear, but usually have an opaque whitish appearance, and are soluble in water and spirit. It is decomposed and the I. set free,

IODINE.

by chlorine, bromine, fuming nitric acid, and ozone (q.v.). There are various ways of obtaining this salt; the following is one of the best. If I. be added to a warm solution of potash until a brown tint begins to appear, iodide of potassium (KI) and potassium iodate (KIO_3) are formed. By gentle ignition of the residue obtained by evaporation, the iodate is decomposed into iodide of potassium and oxygen, so that all that remains is fused iodide of potassium, which is dissolved in water, and allowed to crystallize. Iodide of iron is formed by digesting iron wire or filings in a closed vessel with four times the weight of I. suspended in water. Direct combination takes place, and a pale-green solution is formed, which by evaporation *in vacuo* yields crystals. It is the solution commonly employed in medicine, but as, on exposure to the air, it becomes decomposed, and I. is liberated, it is usually mixed with strong syrup, which retards this change.

There are two iodides of mercury, viz., the green subiodide (Hg_2I_2) and the red iodide (HgI_2). They may be formed either by the direct union of the two elements, or by the double decomposition of iodide of potassium and mercurial salts. There are two well-defined compounds of I. and oxygen, viz., iodic acid (HIO_3) and periodic acid (HIO_4), corresponding to chloric and perchloric acid, neither of which are of special interest.

I. in small quantity, and usually in combination with sodium, magnesium, or calcium, is very widely diffused over the earth's surface. It exists in sea-water, in marine animals and plants, and in certain mineral springs. It is found also in several minerals, e.g., in certain Mexican silver-ores, in Silesian zinc-ores, in phosphorite from the Upper Palatinate, and in coal.

I. was discovered 1811, by Courtois, in the waste liquors produced in the manufacture of carbonate of soda from the ashes of sea-weeds. A few years later, Gay Lussac discovered that it was a simple elementary body. It is obtained from the half-fused ash of dried sea-weeds, known as kelp (q.v.), which contains the iodides of sodium, potassium, magnesium, and perhaps calcium in considerable quantity. The I. is liberated by the addition of binocide of manganese and sulphuric acid. The commercial I. is prepared extensively in Glasgow.

The preparations of I. are much used in medicine and in Photography (q.v.). Iodide of potassium, and the preparations of I. generally, are entitled to be regarded almost as specifics in goitre, bronchocele, or Derbyshire neck. Out of 364 cases (collected by Bayle) treated with I., 274, were cured. Manson, Lugol, and others have shown the value of the I. treatment in scrofula. The preparations of I. are eminently successful also as resolvents in chronic induration, and enlargement of the liver, spleen, uterus, etc. In many forms of chronic rheumatism, and in certain affections of the osseous system, due to a syphilitic taint, iodide of potassium is of the greatest service; and its value in the treatment of chronic lead-poisoning is not so generally known as it should be, even in the medical profession.

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The iodide of potassium dissolves the compounds of lead with albumen, fibrine, etc., which abound in the body in chronic lead-poisoning; and these dissolved compounds are excreted by the kidneys. In these cases, lead may often be detected in the urine, almost immediately after the administration of the iodide. This salt has a similar action in chronic mercurial poisoning, and cases are recorded of mercurial salivation having come on during the use of iodide of potassium, in consequence of the liberation of mercury, which had been previously fixed in the system.

Iodide of iron, given either in syrup or in the form of Blancard's Pills (excellent French mode of administering this salt), is especially serviceable in scrofulous affections of the glandular system, in which the use both of I. and of iron is indicated. The iodides of mercury have been prescribed with good effect in various forms of syphilis. They must be given with caution, on account of their energy, the average dose of the red iodide being a fraction ($\frac{1}{16}$ to $\frac{1}{4}$) of a grain. Pure I. is seldom prescribed internally; but in the form of tincture and ointment, it is a most useful topical application in cases of goitre, local enlargements, diseases of joints, chilblains, etc.

In large doses, I. and most of the iodides act as irritant poisons; but very few fatal cases are on record. In the event of poisoning with the tincture of I., the first point is to evacuate the stomach; and the vomiting is assisted by the copious use of tepid liquids, containing starchy matter, as, for instance, starch, flour, or arrow-root boiled in water; the object being to form iodide of starch, which is comparatively inert.

IODOFORM, *i-öd'o-faorm*: teriodide of Formyl, obtained by adding chlorinated lime to an alcoholic solution of iodide of potassium, the resulting iodate of lime being separated from the I. by the addition of boiling alcohol. It is in crystalline plates, of a beautiful citrine color, sweet in taste, slowly volatile, almost insoluble in water, though readily soluble in alcohol, ether, and oils; and, besides possessing the medical properties of iodine, is a valuable anodyne, and anæsthetic like chloroform. Its solidity prevents its general use by inhalation as an anæsthetic, but applied in the form of an ointment it has great value in healing ulcers, aggravated sores, and irritated or inflamed parts. Internal dose, 1 gr., 3 times a day.

IOLITE, n. *i'ō-līt* [Gr. *ἰὼν*, the violet; *lithos*, a stone]: one of the gems like sapphire, of various shades of pale and dark blue, occurring in granitic and primitive rocks: see DICHOITE.

ION, n. *i'ōn* [Gr. *ἰὼν*, going]: either of the two elements which are evolved out of a particular substance by the voltaic current, and which appear at the poles of the battery.

I'ON: see IONIA.

IONA, *ē-ō'na*: modern name of the most famous of the Hebrides. The name is believed to have originated in a mistaken reading of *n* for *u*: the word, in the oldest manu-

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scripts, being clearly written *Ioua*. From the 6th to the 17th c., the island was most generally called *I, Ii, Ia, Io, Eo, Hy, Hi, Hii, Hie, Hu, Y, or Yi*—that is, simply, ‘the Island;’ or *Icolmkill, I-Columb-Kille, or Hii-Colum-Kille*—that is, ‘the Island of Columba of the Church.’

I. is on the w. coast of Scotland, abt. 8 m. s. of Staffa; and 1½ m. w. of the s.w. promontory of Mull, from which it is separated by the sound of Iona. It is about three m. long, and varies in breadth from a mile to a mile and a half. Pop. (1881) 243. Its area, computed by Bede at ‘five families’ (or ‘five hides of land,’ as the passage is rendered in the Anglo-Saxon Chronicle), is estimated at 2,000 imperial acres, of which rather more than a fourth part is under tillage. The soil is naturally fruitful, and yields earlier crops than most parts of Great Britain, barley sown before the middle of June being ready for the sickle in August. This remarkable fertility was regarded as miraculous in the dark ages, and, no doubt, led to the early occupation of Iona. Dunii, the highest point of the island, is 330 ft. above sea-level.

Its history begins in 563, when St. Columba (q.v.), leaving the shores of Ireland, landed upon I. with 12 disciples. Having obtained a grant of the island, as well—it is said—from his kinsman Conall, son of Comghall, King of the Scots, as from Bruidi, son of Melchon, King of the Picts, he built on it a monastery, long regarded as the mother-church of the Picts, and venerated not only among the Scots of Britain and Ireland, but among the Angles of n. England, who owed their conversion to the self-denying missionaries of Iona. From the end of the 6th to the end of the 8th c., I. was scarcely second to any monastery in the British Isles; and it was this brilliant era of its annals which rose in Johnson’s mind when he described it as ‘that illustrious island which was once the luminary of the Caledonian regions, whence savage clans and roving barbarians derived the benefits of knowledge and the blessings of religion.’ But neither piety nor learning availed to save it from the ravages of the fierce and heathen Norsemen. They burned ‘795, and again 802. Its ‘family’ (as the monks were called) of 68 persons were martyred 806. A second martyrdom, 825, is the subject of a contemporary Latin poem by Walafridus Strabus, abbot of the German monastery of Reichenau, in the Lake of Constance. On the Christmas evening of 986, the island was again wasted by the Norsemen, who slew the abbot and 15 of his monks. Toward the end of the next century, the monastery was repaired by St. Margaret, queen of King Malcolm Canmore. It was visited 1097 by King Magnus the Barefooted, of Norway. It was now part of that kingdom, and so fell under the ecclesiastical jurisdiction of the Bp. of Man and the Abp. of Drontheim. In 1203, the bishops of n. Ireland disputed the authority of the Manx bishop, pulled down a monastery which he had begun to build in the island, and placed the abbey under the rule of an Irish abbot of Derry. The Scottish Church had long claimed jurisdiction in I., and before the end of

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the 13th c., the island fell under the rule of the Scottish king. Its abbey was now peopled by Clugniac monks; and a nunnery of Austin canonesses was planted on its shores. Toward the end of the 15th c., it became the seat of the Scottish Bishop of the Isles, the abbey church being his cathedral, and the monks his chapter.

No building now remains on the island which can claim to have sheltered St. Columba or his disciples. The most ancient ruins are the Laithrichean, or Foundations, in a little bay to the west of Port-a-Churraich; the Cobhan Cuidich, or Culdees' Cell, in a hollow between Dunii and Dunbhuirg; the rath or hill-fort of Dunbhuirg; and the Gleann-an-Teampull, or Glen of the Church, in the middle of the island, believed to be the site of the monastery which the Irish bishops destroyed 1203. St. Oran's Chapel, now the oldest church in the island, is probably of the latter part of the 11th c. St. Mary's Nunnery is perhaps a century later. The Cathedral, or St. Mary's Church, seems to have been built chiefly in the early part of the 13th c.: it has a choir, with a sacristy on the n. side, and chapels on the s. side; n. and s. transepts; a central tower, about 75 ft. high; and a nave. An inscription on one of the columns of the choir appears to denote that it was the work of an Irish ecclesiastic who died 1202. On the n. of the cathedral are the chapter-house and other remains of the conventual or monastic buildings. In the 'Reilig Oran'—so called, it is supposed, from St. Oran, a kinsman of St. Columba, the first who found a grave in it—were buried Ecgfrid, King of Northumbria, 684; Godred, King of the Isles, 1188; and Haco Ospac, King of the Isles, 1228. No monuments of these princes remain. The oldest of the many tombstones on the island are two with Irish inscriptions, one of them, it is believed, being the monument of a bishop of Connor who died at I. 1174.

After centuries of neglect, this interesting island seems now to be receiving attention and improvement. It possesses a church connected with the Established Church of Scotland, also a Free Church, and a school. A small and commodious inn—the St. Columba—was erected 1863 by the Duke of Argyll, proprietor of I.; and tourists and antiquarian explorers can now make visits of satisfactory duration. During summer, steamers from Oban (see *HEBRIDES*) call at I. twice a week; they land passengers by boats at Baile Mor, the only village on the island, and usually allow time for visiting the ruins. See the Duke of Argyll's *Iona* (1871).

IONA ISLAND, *ī-ō'na*: small island in the Hudson river, about 40 m. from New York; belonging to Rockland co. It is a place of extensive grape culture.

IONIA, *ī-ō'nī-a*: ancient name of the most flourishing country of Asia Minor. It received its name from the Ionians (one of the four most ancient tribes in Greece), who, again, according to the mythological account, derived theirs from Ion, whom Euripides in his tragedy *Ion* makes the son of Apollo by Creusa, daughter of a king of Athens.

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According to the usually received tradition, they were driven out of the Peloponnesus by the Achæians, and removed to Attica, whence, about B.C. 1050, bands of them went forth to settle on the coast of Asia. I. was a beautiful and fertile country, a strip of land along the w. coast of the Ægean Sea, extending, according to Ptolemy, from the river Hermus to the river Meander; but Herodotus and Strabo make it somewhat larger. It soon reached a high point of prosperity; agriculture and commerce flourished, and great cities arose, of which Ephesus, Smyrna, Clazomenæ, Erythræ, Colophon, and Miletus were most celebrated. These free cities, the nucleus of the IONIAN LEAGUE, were, however, gradually subdued by the kings of Lydia, and passed (B.C. 557) under the sway of the Persians, but were allowed considerable internal liberty. During the great Persian war, the contingent which they were compelled to furnish to their Oriental masters deserted to the Greeks, at the battle of Mycale (B.C. 479), whereupon the Ionians entered into an alliance with Athens on which they now became dependent. After the Peloponnesian war, they were subject to the Spartans, and again (B.C. 387) to the Persians till the time of Alexander the Great. From this period, I. shared the fate of the neighboring countries, and B.C. 64, was added to the Roman empire by Pompey, after the third Mithridatic war. In later times, it was so ravaged by the Turks that few traces of its former greatness are left.—The *Ionians* were regarded as somewhat effeminate. They were wealthy and luxurious, and the fine arts (see IONIC ARCHITECTURE) were cultivated among them at a much earlier date than among their kinsmen in the mother-country. The *Ionian Dialect* excels the other Greek dialects in softness and smoothness, chiefly from its greater number of vowels.

IONIA, *ī-ō'nī-a*: city, cap. of I. co., Mich.; on Grand river, and at the crossing of the Detroit and Milwaukee and the Detroit Lansing and Lake Mich. railroads; 34 m. e. of Grand Rapids, 38 m. n.w. of Lansing, 124 m. n.w. of Detroit. It contains numerous beautiful residences, 8 churches, high and grammar schools, public park, public library, large railroad repair shops, pottery, brick-yard, 2 foundries, 2 flour mills, 1 national (cap. \$100,000), 1 state (savings), and 2 private banks, and important agricultural and lumbering interests. Pop. (1870) 3,251; (1880) 4,190; (1890) 4,482; (1900) 5,209.

IONIAN, a. *ī-ō'nī-ăn* [Gr. *Ionía*, a district of Asia Minor on the Ægean Sea, first colonized by Ion]: of or relating to Ionia, or its inhabitants. IONIC, a. *ī-ōn'ik*, pertaining to Ionia: denoting one of the five orders of architecture—the five orders being, 1, Tuscan, 2, Doric, 3, Ionic, 4 Corinthian, 5, Composite. IONIAN MODE, in music, one of the old church modes, said to be the same as the ancient Greek mode of that name, and the only one of the old church modes which agrees with our modern system of music, the Ionian mode being the same as our key of C major. The character of the Ionian mode, however, must

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have appeared to the ancients more properly defined than it can to us, as it was the only one of their modes which had a major third and a sharp seventh.

IONIAN ISLANDS: group, or rather chain of islands round the w. coast of Epirus, and w. and s. of Greece. It consists of about 40 islands, of which Corfu, Paxo, Santa Maura, Theaki, Cephalonia, Zante, and Cerigo, are of considerable size: total area about 1,000 sq. m.; pop. (1836) 204,242; (1870) 229,516; (1900) 251,712, mostly Greek descent. The surface is generally mountainous, the plains and valleys being fertile. The collective term 'Ionian' is of modern date. After the division of the Roman Empire these islands were included in the e. half, and so continued till 1081, when the Duke of Calabria (subsequently king of Naples) took possession of them. From this time they underwent continual change of masters, till the commencement of the 15th c., when they by degrees came into the possession of the Venetians, who 1797 ceded them to France. They were seized by Russia and Turkey 1800, by France 1807, by Britain 1809, and 1815, Nov. 5, were formed into a republic ('The Septinsular Republic') under the protectorate of Great Britain. While they were connected with England, the government was carried on by two assemblies, and the *lord high commissioner* as representative of the queen. Till 1848, the press was restricted, and the government was really a despotism, but in that and the following year wide-spread dislike of the English government became apparent. To remove what were supposed to be grievances, Lord Seaton then lord high commissioner, introduced sweeping changes in the constitution, including vote by ballot, lowering of the franchise, and freedom of the press. A demand was then made for annexation to the kingdom of Greece, and an insurrection broke out 1849, Aug., in Cephalonia. It was suppressed by Sir Henry Ward, who had succeeded lord Seaton, with what was considered by some persons as undue severity. Fresh concessions were granted, but without appeasing the malcontents. In the end of 1858, William E. Gladstone was sent as a special commissioner to ascertain what could be done to meet the claims of the population. He found that they would be satisfied with nothing but annexation to Greece. There was no great desire on the part of the English govt. to continue their connection with the islands. They had cost the United Kingdom £100,000 per annum, and had been a perpetual annoyance. In 1863, the election of the son of the king of Denmark as constitutional king of Greece supplied England with an opportunity for riddance of this troublesome dependency; and, 1864, Mar. 29, a treaty was concluded at London by which they were annexed to Greece, and since they have formed a province of the Hellenic kingdom. In 1867, Feb., they were visited by a series of earthquakes, most violent in Cephalonia, where they caused great destruction of life and property, and almost destroyed the two chief towns. See Murray's *Handbook for Greece*

IONIAN SEA—I O U.

and the Ionian Islands, by R. G. Watson.—See CORFU: CEPHALONIA: ETC.

IO'NIAN SEA: ancient name for that part of the Mediterranean w. of Greece, and separating it from Italy and Sicily. It contained the Ionian Islands (q. v.), and was connected with the Adriatic Sea by the strait of Otranto.

ION'IC AR'CHITECTURE: style of Greek architecture which took its origin in Ionia, and seems to have derived many of its characteristic features from Assyria: see GRECIAN ARCHITECTURE. The chief peculiarity of I. A. is the capital of the column (q. v.), which is decorated with spiral ornaments called volutes (q. v.). The columns have also bases, which were not used in Doric architecture. The cornice is distinguished by the dentil band, an ornament introduced first in this style. The honeysuckle ornament (q. v.) so much used in I. A., is one of the features which indicate its eastern origin. Many large temples were erected in this style in Asia Minor and Greece. Among the finest examples remaining are the temples of Erechtheus and Minerva Polias on the Acropolis at Athens, Apollo Didymæus at Miletus, Minerva Polias at Priene, and Bacchus at Teos; and the temple of Fortune at Rome.

ION'IC SCHOOL: collective name for the earliest Greek philosophers, Thales, Anaximander, Anaximenes, Heraclitus, and Anaxagoras, an account of their following one general tendency, and belonging for the most part to Ionia. See their respective titles.

IOTA, n. *ī-ō'tă* [Gr. *ι*, called *iota* (see JOT)]: a jot; a tittle. IOTACIZED, a. *ī-ō'tă-sīzd*, formed by the insertion of *α* *ī*.

I O U [contr. of the sentence or phrase, 'I owe you']: brief memorandum of debt given by a borrower to a lender, so called from being made in this abbreviated form:

NEW YORK, *January 1, 1878.*

Mr. A. B.,

I. O. U. \$20.

C. D.

It is a convenient document from its simplicity; yet it is valuable evidence of the existence of the debt, in case an action is afterward brought. If the I. O. U. contain any promise to pay the debt, then it will amount to a promissory-note

IOWA.

IOWA, *i'o-wa*: state, one of the United States of America: 16th in order of admission into the Union; 1st in hog production, manufacture of butter, and wool clip, 2d in milch cows, oxen, and other cattle, corn, hay, and oats; 3d in number of horses; 4th in agriculture, 5th in barley and railroad mileage, 6th in potatoes and rye; 7th in wheat and coal, 10th in population; known as the 'Hawkeye State.' The name Iowa is of Indian origin, meaning 'the beautiful land.'

Location and Area.—I. is in the centre of the upper Miss. valley, lat. $40^{\circ} 36'$ — $43^{\circ} 30'$ n., long. $89^{\circ} 5'$ — $96^{\circ} 31'$ w.; bounded n. by Minn., e. by Wis. and Ill., s. by Mo., w. by Neb. and Dak.; extreme length n. to s. 208 m., extreme width e. to w. 300 m.; river frontage (Miss. and Mo.) 729 m.; 56,025 sq. m. (35,856,000 acres); highest elevation above sea-level 1,695 ft., lowest 444, average 800–900; cap. Des Moines.

Topography.—The surface in general is an undulating prairie without mountains or notable hills, but with one great watershed dividing the rivers that flow into the Miss. on the e. and the Mo. on the w., and a minor one extending s. from Adair co., the two giving n. to s. and e. and w. slopes. 95 per cent. of the whole area is arable and exceedingly productive. Of the 35,856,000 acres, more than 25,000,000 were improved in 1890, and the greater part in the highest state of cultivation; much of the unimproved was in rich pasture. The soil is a deep, dark, fertile loam, watered by copious streams, and requiring no fertilizers. The Miss. river borders the state on the e. for 365 m., and the Mo. river on the w. for 364; the former receives the waters of the Upper Iowa, Turkey, Maquoketa, Wapsipinicon, Iowa, Cedar, Skunk, and Des Moines rivers, and the latter those of the Chariton, Grand, Platte, Nodaway forks, and Nishnabotona rivers. There are two series of rapids in the Miss. river opposite I., the upper extending from Davenport to Leclaire, and the lower (Des Moines Rapids) from Keokuk to Montrose. The n. cos. of I. are dotted with very picturesque lakes, of which Spirit, Okoboji (both popular summer resorts), Clear, and Storm are the largest, though none are of great extent.

Climate.—The climate is delightful, healthful, and invigorating, and owing to the perfect system of natural drainage malaria is almost unknown. In general salubrity I. holds the first rank among the states. The mean annual temperature ranges from 42° to 52° , the summer mean 66° to 79° , and the winter mean 14° to 27° ; highest temperatures recorded 95° to 105° , lowest 18° to 33° below zero; temperature lowest and extremes greatest in the n. and w., mildest and most equable with greatest rainfall in the s.e.; average rainfall $43\frac{1}{2}$ inches; snow, less in quantity than in e. states, lasts longer; the Miss. and Mo. rivers opposite I. and the interior rivers and lakes remain frozen 3 months each year.

Geology. The systems underlying the coal measures of I. precede them as they extend northward, in such a manner that the carboniferous finally runs directly against and

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overlaps the lower formations as they emerge one above the other to the surface. Thus, in ascending the Des Moines river to a point 9 m. above Fort Dodge, the carboniferous system is seen running against the sub-carboniferous, and then entirely disappears, giving way to the St. Louis limestone; and in ascending the Miss. river the carboniferous gives way to the sub-carboniferous, that to the Devonian near Davenport, and that to the Upper Silurian and Lower Silurian at Dubuque. The area of the coal measures (mainly bituminous) was estimated (1888) at 20,000 sq. m. There were, in 1890, 392 mines in operation, \$6,279,179 capital invested, and products (1885) 3,583,737 long tons, (1890) 4,095,358 short tons valued at \$5,426,509, (1888) 4,105,558. Vast deposits of gypsum, black-band and kidney iron-ore, argentiferous galena lead-ore, red and Spanish brown ochre, peat that yields richly of dry fuel, Potsdam and St. Peter's sandstone, Lower magnesium, Trenton, Galena, Niagara, and Hamilton limestone, and fire and potter's clay abound. The soil is drift, bluff, and alluvial; the former covers the greater part of the state and is a dark loam one to two ft in depth; the bluff, along the Miss. river, is supposed to be a sub-aerial deposit brought by the wind from Neb. and Dak., and in some places reaches a depth of 200 ft.; and the alluvial in the valleys and bottom-lands is a deposit of the water-courses. Forests and woodlands occupy 4,985,668 acres, and yield several kinds of oak, beside elm, cotton-wood, black walnut, hickory, sugar and soft maples, linden, wild cherry, ash, butternut, sycamore, pine, and red cedar. Among native fruit-trees are the plum, crab-apple, and cherry, and the nuts include hickory, hazel, pecan, black walnuts, and butternuts. Grapes, apples, and pears are abundant, and the usual variety of small fruits and garden vegetables thrive well.

Zoology.—Wild animals have become nearly extinct in the state. Deer, gray wolf, wild cat, and prairie wolf are occasionally found in the woodlands; and the beaver, otter, muskrat, mink, and raccoon, in or near some of the rivers. Small game, ruffed grouse, prairie hen, quail, snipe, woodcock, and several varieties of duck, are abundant in season; as also are salmon, lake and brook trout, white fish, perch, roach, common and brown cat-fish, and other species, favorites of the sportsman and epicure.

Agriculture.—In 1900 there were 228,662 farms in I., comprising 34,574,337 acres valued at \$1,834,345,546, of which 29,897,552 acres were improved and had farm implements and machinery valued at \$57,960,660. The chief crops (1902) were: corn 297,686,616 bu., oats 124,738,337, wheat 14,869,245, barley 13,505,024, rye 1,239,941, and wool 4,160,000 pounds. Sheep numbered (1903) 898,040; the farm animals of all kinds were valued at \$277,410,504. A state census (1885) showed the following: number of farms 232,225; acres of improved land 20,189,894; acres unimproved 8,058,853; persons engaged in farming 239,983; crops: corn 7,549,542 acres, 242,496,000 bushels, \$58,199,040 value; wheat 2,688,944 acres, 30,332,000 bushels, \$20,322,440 value; oats 2,210,338 acres, 74,718,000

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bushels, \$16,437,960 value; rye 127,459 acres, 1,746,000 bushels, \$803,246 value; barley 221,999 acres, 5,106,000 bushels, \$1,991,331 value; buckwheat 20,679 acres, 244,000 bushels, \$165,928 value; potatoes 137,563 acres, 12,381,000 bushels, \$5,076,075 value; hay 3,787,500 acres, 4,355,625 bales, \$21,124,781 value; tobacco 440,690 pounds; sorghum molasses 1,971,818 gallons; apples 4,113,591 bushels; grapes 9,096,396 pounds; honey 1,997,931 pounds; flax seed 2,663,072 bushels; butter 48,326,757 pounds; cheese 942,099 pounds; and wool 2,289,430 pounds. The garden products were valued at \$735,020; orchard \$1,973,620; dairy \$13,797,327. There were 992,313 milch cows, 843,767 horses, and 4,514,621 hogs on the farms. In 1887 the crops were: corn 7,287,000 acres, 155,570,450 bushels, \$49,784,784 value; wheat 2,491,248 acres, 18,141,552 bushels, \$10,340,685 value; oats 2,432,686 acres, 61,121,236 bushels, \$13,446,672 value; rye 107,000 acres, 1,765,500 bushels, \$737,096 value; barley 172,800 acres, 3,801,600 bushels, \$1,571,328 value; buckwheat 21,000 acres, 315,000 bushels, \$233,100 value; flax-seed 265,000 acres, 2,186,250 bushels, \$2,055,175 value; potatoes 159,880 acres, 8,163,785 bushels, \$5,015,608 value; hay 3,336,347 acres, 2,919,304 tons, \$23,332,399 value. The farm animals included 973,808 horses, valued at \$71,926,052; 48,052 mules, \$4,186,822; 1,242,000 milch cows, \$32,541,792; 2,116,417 other cattle, \$47,369,232; 425,498 sheep, \$1,020,515; 4,461,087 hogs, \$23,065,603; total animals 9,267,864, valued \$180,110,016. In the crop year 1889 the oat acreage was 2,637,501, and the estimated yield 105,500,040 bushels.

Manufactures.—I. had (1891) 7,440 manufacturing establishments, employing 59,174 hands, using a capital of \$39,001,353, paying in wages \$25,878,997, using materials valued at \$79,292,407, and yielding products valued at \$125,049,183. The chief industry according to capital employed was the manufacture of lumber, planing-mill products, etc., which employed a capital of \$20,531,970, paid wages \$3,094,493, used materials valued at \$10,007,956, and received for products \$15,417,921; then followed flour-and grist-mill products, capital \$6,696,759, wages \$788,872, materials \$9,786,174, product \$11,833,737; foundry and machine-shop products, capital \$3,032,277, wages \$1,289,579, materials \$1,454,164, product \$3,432,360; slaughtering and meat-packing, capital \$4,105,020, wages \$1,014,817, materials \$17,375,828, product \$19,615,386; printing and publishing, capital \$3,501,710, wages \$1,744,480, materials \$863,764, product \$3,818,623; carriages and wagons, capital \$2,765,207, product \$3,168,545, and railway-car construction and repairs, capital \$2,404,648, product \$4,473,089. In 1900 there were 14,819 manufacturing factories reported with a combined capital of \$102,733,103, employing 58,553 persons, paying \$23,931,680 for wages and \$101,170,357 for materials, and having products valued at \$164,617,877.

Commerce.—I. is (1896) comprised in two internal-revenue districts. The collections 1895 were: on distilled spirits \$91,091; tobacco \$217,541; fermented liquors \$138,945; oleomargarine \$2,947; penalties \$6,493; aggregate collec-

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tions \$465,105. There were registered (1889) at the ports of Dubuque and Burlington 79 vessels, of which 69 were steamers; total tonnage 9,556; total tonnage of the state (1894) 8,720. I. has no direct foreign commerce, but has a large internal and interstate trade in cereals, packed meats, merchandise, coal, and lead.

Railroads.—In 1885 there were 7,504 m. of railroads; capital stock \$49,302,974; funded debt \$49,789,258; total investment \$105,635,103; cost of construction and equipment \$98,367,081. 1887, June 30, the mileage in operation was 7,997; capital stock \$147,350,517; bonds \$150,296,919. At close of the year the mileage had increased to 8,203; amount of taxes paid to the state \$1,011,530. In 1888 the mileage was 8,486, assessed valuation of all roads \$42,500,000, against \$38,250,000 in 1887. The total railway mileage in 1901 was 9,376. Since admission into Union, I. has given 4,393,436 acres of land to aid the development of her railroad system.

Religion.—In 1890 there were 5,539 churches in I., with a total of 556,817 members. The Meth. Episc. Church led with 1,342 churches and 111,426 members (communicants); then followed the Lutherans with 567 churches and 63,725 members; Rom. Cath. 441 churches and 164,522 members; Bapt. (regular) 417 churches and 30,901 members; Disciples 403 churches and 30,988 members; Presb. 369 churches and 20,994 members; Cong. 285 churches and 23,733 members; and other denominations with 1,715 churches and 110,528 members. In 1888 the Bapt. (regular) churches reported 28 associations, 432 churches, 313 ministers, 27,445 members, 298 Sunday-schools, 2,824 officers and teachers, and 21,463 scholars. The Pres. Church in the U. S. A. reported 8 synods, 357 churches, 270 ministers, 25,395 members, 297 Sunday-schools, 3,615 officers and teachers, and 25,505 scholars. The Rom. Cath. Church had the diocese of Davenport (erected 1881), in which there were 83 priests, 143 churches, 12 academies, 1 seminary, 6 convents, 34 parochial schools, 6 hospitals, 1 asylum (insane), and a Rom. Cath. population of 51,759; and the diocese of Dubuque (erected 1837), in which there were 177 priests, 145 churches, 90 chapels, 1 college, 8 academies, 1 seminary, 1 monastery, 20 convents, 54 parochial schools, 2 orphanages, 2 hospitals, and 1 asylum: totals, 260 priests, 288 churches, 26 convents, 1 monastery, 1 college, 2 seminaries, 88 parochial schools, 8 hospitals, and 2 asylums. The Congl. churches reported 260 churches, 179 ministers, 21,120 members, and 24,947 Sunday-school officers, teachers, and scholars; the Prot. Episc. (comprised in the diocese of I., organized 1854), 103 parishes and missions, 55 clergy, 3,496 families, 13,321 individuals, 5,348 communicants, 447 Sunday-school officers and teachers, 3,934 scholars, 1 college, 4 schools, 1 home, and a diocesan paper; the Lutheran (the synod of I., organized 1855), 35 congregations, 24 ministers, 1,433 communicants; (the German synod of I., organized 1845), 365 congregations, 241 ministers, 33,000 communicants: total of both synods, 400 congregations, 265 ministers, 34,433 communicants; Meth. Prot., 48 churches, 36

IOWA.

ministers, 26 preachers, 3,204 members; Seventh-day Advent, 76 churches, 12 ministers, 1,756 members; Freewill Bapt., 6 quarterly meetings, 40 churches, 36 ministers, 1,690 members; Univ., 23 church edifices, 29 parishes, 601 members, 13 Sunday-schools, and 883 scholars.

Elementary Education.—In 1894-5 of a total estimated population of 2,064,000 there were 622,600 children of school age; average number of pupils attending school each day 339,300; male teachers 5,726, female 22,117, total 27,843; average monthly salaries of teachers, males \$37.68, females \$31.63; number of schoolhouses 13,613; estimated value of all school property \$15,645,543; number of pupils in private schools 34,153. The total revenue for public-school purposes was \$8,458,748; total expenditure (excluding payment of bonds) \$5,682,945.

Normal Schools.—There were, in 1894-95, 5 public normal schools, with 51 teachers and 2,234 students, of whom 1,688 were in the normal department; value of grounds, buildings, etc., \$132,500; income from state, county, and city appropriations for support \$38,525, from tuition fees \$11,835, total \$50,740. There were also 17 private normal schools, with 77 teachers and 3,991 pupils of all grades. There were besides in the teachers' training courses of the various universities and colleges 385 students.

High and Secondary Schools.—The public high schools numbered (1894-5) 158; teachers, male 262, female 237, total 499; students in secondary grades, male 5,113, female 8,188, total 13,301; students below secondary grades, male 28,666, female 31,198, total 59,864, value of grounds, buildings, and scientific apparatus 4,383,893; volumes in libraries 97,656. The private secondary schools numbered 40, teachers 157, students of all grades 3,281; value of grounds, buildings, etc., \$568,300; endowments \$101,100; volumes in libraries 48,247. Of the private secondary schools all but 12 were under the care and patronage of various religious denominations.

Universities and Colleges.—The total number of institutions for higher education in 1894-95 was 23, with 429 instructors and 6,615 students, preparatory 2,228, collegiate 2,117, graduate 99, professional 1,003. See IOWA COLLEGE: IOWA STATE AGRICULTURAL COLLEGE: IOWA STATE UNIVERSITY.

Illiteracy.—Persons 10 years old and upward enumerated (1890) 1,441,308; unable to read and write 52,061; of the illiterates 49,828 were white and 2,233 colored (including persons of negro descent, Chinese, Japanese, and civilized Indians); native white population illiterate 20,649, foreign 29,179.

Finances and Banking.—According to the U. S. Census of 1890, the state of I. had in 1889, June 30, no bonded debt, but a floating debt (obligations to school fund) of \$245,435; there were at the same time county debts of \$3,416,889; municipal debts \$6,391,772; school-district debts \$1,221,223; total combined debt less sinking fund \$11,275,319. The assessed property valuations (1902) aggregated \$572,840,391. There were no outstanding warrants, and the

IOWA.

State had in cash \$948,696 and claims against the Fed. gov. aggregating \$484,400. There were 230 nat. banks, 230 state, and 157 private; and 1,868 post-offices.

History.—The territory now included in I. formed a part of the great tract claimed by the French on account of Jacques Marquette's discovery 1673, transferred by treaty to Spain 1763, ceded to France 1800, and included in the La. purchase by the United States 1803. The earliest inhabitants were portions of the Sac, Fox, Iowa, and Dakota tribes of Indians. In 1788 the French made a short-lived settlement at Dubuque and worked the lead mines there; 1805 the territory included in the La. purchase was made a separate territory; 1812 the name was changed to Mo. Terr.; 1834 the I. portion became a part of Mich. Terr.; 1836 it was transferred to the jurisdiction of Wis. Terr.; 1838 was organized as I. terr.; 1846 the e. and s. portion was admitted into the Union as a state, the n. and w. parts remaining I. Terr.; and 1849 it received its present limits, when Minn. Terr. was organized with a part of the state of I., and the latter was given a part of I. Terr. The permanent settling of the territory under authority of the federal gov't. began 1833, and terr. and state have had uninterrupted prosperity since. The present constitution of I. is its second, and was adopted 1857, the year the capital was removed to Des Moines. The legislature several times passed acts, striking out the word 'white' wherever it was used in the constitution to define the qualifications of voters, the basis of representation, and the obligations of militia duty, and the people ratified the change 1868. In 1870 an attempt was made to have the constitution revised but the popular vote was against the measure. I. sent 76,242 men into the Union army during the civil war, paid no bounty, and redeemed all its war obligations at the close of the conflict.

Government.—The executive authority is vested by the constitution in a gov., elected for 2 years, salary \$3,000 per annum; the legislative in a general assembly comprising a senate of 50 members elected for 4 years, and a house of representatives of 100 members elected for 2 years, salary of each \$550 per annum, biennial sessions; and the judicial in supreme, district, and circuit courts. The supreme court has 4 judges elected by the people for 6 years each, one every second year, and the chief justice is he who has the shortest term to serve; salary of judges \$4,000 per annum. District and circuit court judges are elected for 4 years, and receive \$2,200 per annum. The lieut. gov. receives \$1,100 per annum; sec. of state \$2,200; treas., \$2,200; auditor \$2,200; attor. gen., \$1,500, and \$5 per diem; supt. of public instruction \$2,200; 3 railroad commissioners \$3,000; state librarian \$1,500; pension agent \$4,000; and 4 collectors of internal revenue, \$2,500-\$4,500; there are 17 presidential and 115 other post-offices; salaries of postmasters \$1,000-\$3,300.

The successive gov's. with their terms of service are as follows: terr.: Robert Lucas, 1838-41; John Chambers.

IOWA—IOWA CITY.

1841-6; James Clark, 1846; state: Ansel Briggs, 1846-50; Stephen Hempstead, 1850-4; James W. Grimes, 1854-8; Ralph P. Lowe, 1858-60; Samuel J. Kirkwood, 1860-4; William M. Stone, 1864-8; Samuel Merrill, 1868-72; Cyrus C. Carpenter, 1872-6; Samuel J. Kirkwood, 1876-7; Joshua G. Newbold 1877-8; John H. Gear, 1878-82; Buren R. Sherman, 1882-86; William Larrabee, 1886-90; Horace Boies, 1890-94; Frank D. Jackson, 1894-96; Francis M. Drake, 1896-98; Leslie M. Shaw, 1898-1902; Albert B. Cummins, 1902-04.

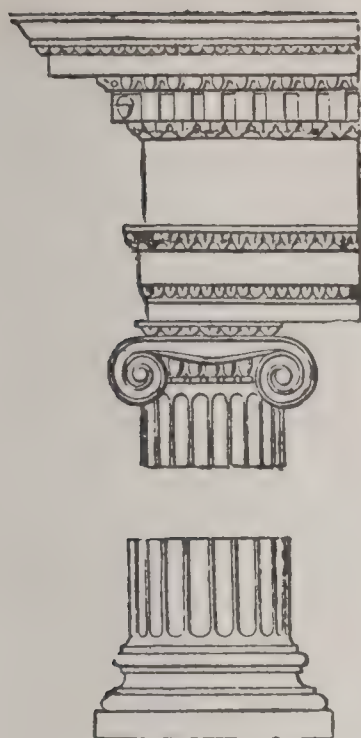
Counties, Cities, and Towns.—I. is divided into 99 counties. In 1880 the most populous *counties* were: Dubuque 42,996; Polk 42,395; Scott 41,266; Pottawattamie 39,850; Linn 37,237; Clinton 36,763; Lee 34,859; Des Moines 33,699; Clayton 28,829; Jasper 25,963; Johnson 25,429; Mahaska 25,202; and Marion 25,111; and *cities and towns*: Des Moines 22,408; Dubuque 22,254; Burlington, 19,450; Council Bluffs 18,063; Keokuk 12,117; Cedar Rapids 10,104; Clinton 9,052; Ottumwa 9,004. In 1890 the leading *counties* were: Polk 65,410; Woodbury 55,632; Dubuque 49,848; Pottawattamie 47,430; Linn 45,303; Scott 43,164; Clinton 41,199; Lee 37,715; Des Moines 35,324; Mahaska 28,805; Clayton 26,733; Jasper 24,943; Johnson 23,082; and Marion 23,058; and *cities and towns*: Des Moines 50,093; Sioux City 37,806; Dubuque 30,311; Davenport 26,872; Burlington 22,565; Council Bluffs 21,474; Cedar Rapids 18,020; Keokuk 14,101; Ottumwa 14,001.

Politics.—State elections are held annually, Tuesday after the second Monday in Oct., excepting in 'presidential' years when state, congressional, and presidential elections are held the same day in Nov. The state govt. (1903) is repub., with a party maj. of 28 in the senate, 68 in the house, and 96 on joint ballot. Idiots, insane, and criminals are excluded from voting. I. has 13 electoral votes. Her votes for pres. and vice-pres. have been as follows: 1848, Lewis Cass and William O. Butler 4; 1852, Franklin Pierce and William R. King; 1856, John C. Fremont and William L. Dayton; 1860, Abraham Lincoln and Hannibal Hamlin; 1864, Abraham Lincoln and Andrew Johnson 8; 1868, U. S. Grant and Schuyler Colfax; 1872, U. S. Grant and Henry Wilson 11; 1876, Rutherford B. Hayes and William A. Wheeler; 1880, James A. Garfield and Chester A. Arthur; 1884, James G. Blaine and John A. Logan 13; 1888, Harrison; 1892, Harrison; 1896, McKinley; 1900, McKinley.

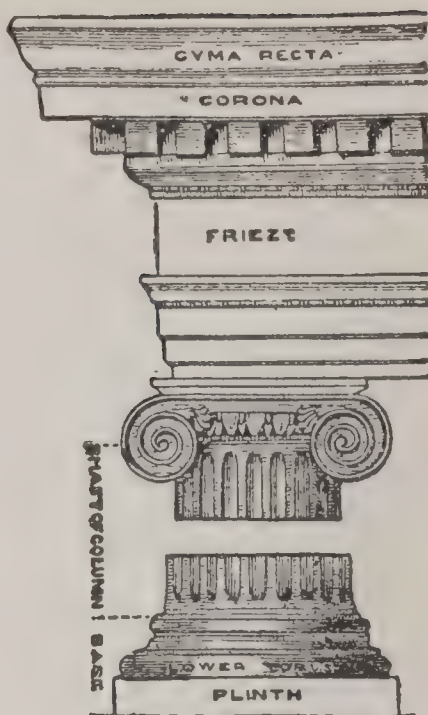
Population.—(1840) white 42,924, colored 188, total 43,112; (1850) white 191,881, colored 333, total 192,214; (1860) white 673,779, colored 1,069, total 674,913; (1870) white 1,188,207, colored 5,762, total 1,194,020; (1880) white 1,614,600, colored 10,015, total 1,624,615; (1885) 1,753,980; (1890) 1,911,896; (1900) 2,231,853.

IOWA RIVER: stream of Io., rising in Hancock co., flowing s.e. for 300 m., 80 of which are navigable, and emptying into the Miss. river 35 m. n. of Burlington.

IOWA CITY: city, cap. of Johnson co., Io.; on the Io. river and the Chicago Rock Island and Pacific railroad; 54 m. w. of Davenport, 130 m. e. of Des Moines. It



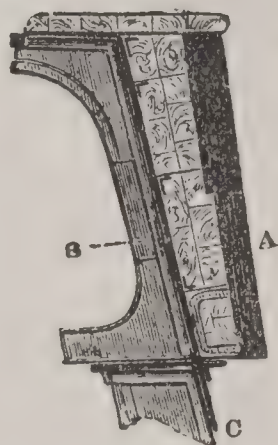
Ionic Order.



Ionic Column.



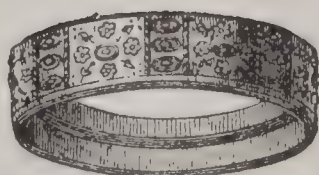
Iron-bark Tree (*Eucalyptus resinifera*).



A, Iron plating; B, Teak backing; C, Ship's side.



Iris.



Iron Crown of Lombardy,
in Monza Cathedral.



Isatis.

IOWA COLLEGE—IOWAS.

is built on a series of plateaus 150 ft. above the river, contains several flour mills and woolen, flax, oil, and other manufactories, is the centre of one of the richest live stock districts in the state, is lighted by gas and electricity, has a telephone system with surrounding towns, and Holly system of water-works supplied by 3 artesian wells. Beside a high school and ward grammar schools, it has a commercial college, St. Agatha's Seminary, and several academies, and is the seat of the Io. State Univ. It was the cap. of Io. Terr. 1839-55, and the old capital is now used by the State Univ. It is at the head of steamboat navigation of Iowa river. Pop. (1870) 5,914; (1880) 7,125; (1890) 7,016; (1900) 7,987.

IOWA COLLEGE: at Grinnell, Poweshiek co., Io.; oldest college in the state; founded 1846 by the 'Iowa Band' of students from Andover Theol. Seminary (Congl.); opened at Davenport 1848; removed to Grinnell and merged in Grinnell Univ. 1858; destroyed by a tornado 1882; and since rebuilt on a larger scale than before. Within three years after the loss of buildings, apparatus, and valuable records by the tornado, the two original buildings were replaced by four new and better ones, and the work of the institution was but briefly interrupted. The grounds comprised 25 acres, to which 5 were added by gift for the use of the ladies' dept. 1888. The buildings are Blair Hall, to which John Insley Blair of N. J. gave more than \$15,000; Chicago Hall, begun with contributions from Chicago; Alumni Hall, built chiefly through the efforts of the class of '82 and other graduates; and Goodnow Hall (erected 1885), named from E. A. Goodnow of Worcester, Mass. The latter contains the astronomical observatory, in which an 8-in. Clark objective telescope was erected 1888, Feb. I. C. has real estate valued at \$130,000, and other property \$175,000, an annual income of \$20,000, and no debt. Ladies were admitted 1857. George F. Maroun, D.D., was pres. 1864-84. Prof. S. J. Buck acting pres. 1884-7, Rev. Geo. A. Gates, D.D., became pres. 1887, and Daniel F. Bradley, D.D., 1901.

IOWAS: tribe of American Indians of the Dakota family, calling themselves Pahucha (dusty nose), and known among the Algonquin tribes as Iowas and Mascoutin or Prairie Nadouessis. Marquette found 8 distinct clans of them in the region of the present city of Des Moines 1673. In 1700 they lived along the Mankata or Blue Earth river in Minn.; 1824 ceded all their lands in Mo. Terr. to the United States and established their chief villages on the Iowa and Des Moines rivers; 1836 removed to the w. bank of the Mo. river above Wolf river; 1846 ceded to the United States all their reservation excepting 16,000 acres; and 1883 were given a reservation in Indian Terr. between the e. border of the Oklahoma district (opened to settlement 1889) and the reservation of the Sacs and Foxes. They have diminished rapidly in numbers by tribal wars and disease, and were estimated (1889) at less than 100.

IPECACUANHA.

IOWA STATE AGRICULTURAL COLLEGE: near Ames, Story co., Io.; founded as a state institution by the legislature 1858; endowed with the congressional land grant awarded the state of Io. (204,309 acres) 1862; and organized under its present form 1869. In 1885-6 it had 45 professors, instructors, and lecturers, 592 male and female students; 12,000 vols. in library; grounds, buildings, and apparatus valued at \$360,000; productive funds \$600,000; income, productive funds \$45,000, state appropriation \$5,300, total \$51,300. The farm comprises 900 acres valued at \$35,000, one-half occupied for purely agricultural work, the other for gardening, forestry, and ornamental work. The four years' course of study comprises literature (for women), science, agriculture, mechanical engineering, civil engineering, veterinary science, and domestic economy, with military exercises for male students, who have a prescribed uniform and form a college battalion. Acting pres. (1903) E. W. Stanton, M.Sc.

IOWA STATE UNIVERSITY: at Iowa City, Io.; chartered 1847, founded 1855, organized 1860; originally endowed by congress with two townships of land from which it has a permanent fund. It has received \$28,000 annually from the state since 1878; and has further receipts from biennial legislative appropriations and tuition fees. In 1886-7 it had 43 professors and instructors; 245 students in the collegiate dept. 18,000 vols. in its library; grounds, buildings, and apparatus valued at \$400,000; productive funds \$215,037; income, productive funds \$16,905, state appropriation \$28,000, tuition fees \$17,768, other sources \$922, total \$63,595. Since its permanent organization it has added to its collegiate dept. 5 others, law 1868, medical 1870, homœopathic medical 1877, dental 1882, and pharmaceutical 1886. The pres. (1903) was George E. McLean, LL.D.

IPECACUANHA, n. *ĩp'ě-kăk'ũ-ăn'ă* [Brazilian or Port.; the name in Brazil is said to signify, 'the roadside sick-making plant']: name both of a very valuable medicine and of the plant producing it. The plant (*Cephaelis Ipecacuanha*) belongs to the nat. ord. *Cinchonaceæ*, and grows in damp shady woods in Brazil and some other parts of S. America. It is somewhat shrubby, with a few oblongo-lanceolate leaves near the ends of the branches, long-stalked heads of small white flowers, and soft dark purple berries. The part of I. used in medicine is the root, which is simple or divided into a few branches, flexuous, about as thick as a goose-quill, and is composed of rings of various size, somewhat fleshy when fresh, and appearing as if closely strung on a central woody cord. The different kinds known in commerce (*Gray, Red, Brown*) all are produced by the same plant; the differences arising from the age of the plant, the mode of drying, etc. I. root is prepared for the market by mere drying. It is collected at all seasons, though chiefly from Jan. to March; the plant is never cultivated, but is sought for in the forests chiefly by Indians, some of whom give months at a time to

IPECACUANHA.

this occupation. It has now become scarce in the neighborhood of towns.

Various other plants, containing emetine, are used as substitutes for true ipecacuanha. The I. of Venezuela is produced by *Sarcostemma glaucum*, of the order *Asclepiadæ*; and to this order belongs *Tylophora asthmatica*, the root of which is found a valuable substitute for I. in India.

It is in the bark of the root that the active principle, the *emetine*, almost entirely lies, and in good specimens it amounts to 14 or 16 per cent.; the other ingredients, fatty matters, starch, lignine, etc., being almost inert. Emetine is represented by the formula $C_{30}H_{44}N_2O_4$. It is a white, inodorous, almost insipid powder, moderately soluble in alcohol, and having all the characters of the vegetable alkaloids. It acts as a violent emetic in doses of $\frac{1}{16}$ of a grain or less, and is a powerful poison. The incautious inhalation of the dust or powder of I.—as in the process of powdering it—will often bring on a kind of spasmodic asthma. In small and repeated doses—e.g. a grain or



Ipecacuanha.

less—I. increases the activity of the secreting organs, especially of the bronchial mucous membrane, and of the skin. In larger doses of 1 to 5 grains it excites nausea and depression, while in doses of from 15 to 30 grains it acts as an emetic, without producing such violent action or so much nausea and depression as tartar emetic.—I. is useful as an emetic when it is necessary to unload the stomach in cases where there is great debility, or in childhood. As a nauseant, expectorant, and diaphoretic, it is prescribed in affections of the respiratory organs, as catarrh, hooping-cough, asthma, etc.; in affections of the alimentary canal as indigestion, dysentery, etc.; and in disorders in which it is desired to increase the action of the skin, as in diabetes, febrile affections, etc.

Besides the powder, the most useful preparations are the

IPHIGENIA—IPSWICH.

wine of I.—of which the dose to an adult as a diaphoretic and expectorant ranges from 10 to 40 minims, and as an emetic from 1 to 4 drachms—and the compound I. powder, commonly known as *Dover's Powder* (q.v.). To produce the full effect as a sudorific, a dose of ten grains of Dover's powder should be followed by copious draughts of white-wine whey, treacle-posset, or some other warm and harmless drink.

IPHIGENIA, *îf-î-jē-nî'a*, in Grecian Legend: daughter of Agamemnon and Clytemnestra; or, according to others, adopted daughter of Clytemnestra. Her father, having offended Diana, vowed to make atonement by sacrificing to the goddess the most beautiful thing born within the year. This happened to be Iphigenia. Agamemnon long delayed the fulfilment of his vow, but at length the Trojan expedition drew on, and the Greek fleet being detained in Aulis by a calm, the seer Calchas declared that Agamemnon must keep his promise. When I. was brought to the altar, however, she disappeared, and a hind lay there in her stead, Diana herself having carried her off in a cloud to Tauris, where she became her priestess, but was afterward happily recognized by her brother, Orestes, who had come to seek her and whom she as priestess was about to slay as a sacrifice as the custom was with all strangers. Orestes carried her, with the image of Diana, to Attica. Various incidental points connected with this legend show I. to have been originally a form of Diana or Artemis. The legend is of post-Homeric origin. It has, however, been much wrought into Grecian poetry, and afforded many subjects to painters and sculptors. In modern literature, it has been employed with great genius and poetic art by Goethe in *Iphigenia auf Tauris*.

IPOMÆA, *îp-o-mē'a*: genus of plants of nat. ord. *Convolvulaceæ*, differing very little from the genus *Convolvulus*. The species are numerous. They mostly are natives of warm countries. Some are often seen in flower-gardens and hot-houses, being very ornamental, and readily covering trellises with their twining stems, large leaves, and large beautiful flowers. The roots of some of them yield a resinous substance, with properties resembling those of jalap, and the true Jalap (q.v.) plant itself has sometimes been referred to this genus.

IPSAMBUL': see ABOUSAMBUL.

IPSE DIXIT, *îp'sē dîks'îť* [L. he himself said it]: on his sole assertion—said of a piece of dogmatism. *Note*.—The phrase is said to have been originally used by the Peripatetics in quoting Aristotle.

IP'SICA: see MODICA.

IPSISSIMA VERBA, phrase, *îp-sîs'sî-ma vēr'ba* [L.]: the very words; the exact words or terms.

IPSO FACTO, phrase, *îp'sō fāk'tō* [L.]: by the very act or fact.

IPSWICH, *îps'wîch*: town in Essex co., Mass.; at the mouth of Ipswich river and on the eastern division of the

IPSWICH—IQUIQUE.

Boston and Maine railroad; 3 m. from the Atlantic ocean, 27 m. n.n.e. of Boston. It is on both sides the river, which is here crossed by two stone bridges; has an excellent bay and harbor; and contains manufactories of woolen goods, hosiery, boots and shoes, soap, silk, and isinglass, high, classical, and grammar schools, young ladies' seminary, public library, insane asylum, house of correction, 5 churches, and a savings bank. It was settled by John Winthrop 1633, Mar., and for many years was the co. seat. The first meeting-house was erected 1634, the first public school opened 1642, and its first classical school founded 1650. Pop. (1880) 3,699; (1890) 4,439; (1900) 4,658.

IPSWICH: market-town, parliamentary and municipal borough, and river-port of England, cap. of the county of Suffolk; agreeably situated on the river Orwell, at the foot of a range of hills, 68 m. n.e. of London. The older portions of the town consist of narrow and irregular streets, some of the old houses of which are ornamented with curious carved work. It contains numerous churches and benevolent institutions, a town-hall, a mechanics' institution, with about 700 members; and a Working Men's College, with 200 members. Of its educational establishments, the principal is the grammar-school, founded by Cardinal Wolsey, and endowed by Queen Elizabeth; it has an income from endowment of £116 6s. 8d., has six scholarships, exclusive of an Albert scholarship founded as a memorial of the late Prince Consort, and two exhibitions at Pembroke College, Cambridge. There are large iron and soap factories, breweries, corn-mills, and ship-building docks. The exports are chiefly agricultural produce, and agricultural implements and machinery; imports, wine, coal, iron, and timber. The town can be reached by vessels of 500 tons. It sends two members to the imperial parliament. Pop. (1881) 50,762; (1890) 57,260; (1901) 66,622. I. was pillaged by the Danes 991, and again 1000.

IPS'WICH: second town in importance in state of Queensland, Australia; on the Bremer river, 25 m. w. of Brisbane. It is the terminus of the s. and w. railroad systems; became a municipality 1860; contains numerous churches, chapels, and grammar-schools, hospital, mechanics' institute with valuable library, and two newspapers; has extensive coal mines; and carries on a large general trade. Pop. (1871) 5,092; (1901) 15,246.

IQUIQUE, *e-kē'kū*: seaport and cap. of the province of Tarapaca, formerly belonging to Peru but since 1883 to Chili; lat. 20° 12' s. Ever since the discovery of apparently inexhaustible beds of nitrate of soda in its vicinity, it has been the most important seaport of Peru after Callao, the average monthly receipts at its custom-house exceeding \$400,000. Nearly 300,000 tons of nitrate of soda are annually exported from I., Mejillones, Junin, and Pisagua, and from 60 to 70 tons of iodine from the factories of I. alone. The town was almost totally destroyed by fire 1875, and by a series of earthquakes (which caused a dam-

IR—IRBIT.

age of \$4,000,000) 1877, and with the whole province passed to the possession of Chili by treaty after the close of the war between Peru and Bolivia and Chili 1880-1. Since the earthquakes it has been rebuilt more substantially, and become a thoroughly cosmopolitan town. Pop. (1895) 33,031.

IR, *ir*: another form of the prefix *in*, signifying 'not,' etc.: see **IN**.

IRADE, n. *ī-rād'ē* [Turk.]: in *Turkey*, an imperial decree; the form of a decree.

I-RAIL, n. *ī'rāl*: double-headed rail with flanges on each side above and below, on the foot and tread; hence like a capital **I**.

IRAK-AJEMI, *ē-rāk'āj'ēh-mē*: large province of Persia, bounded n. by the provinces of Azerbaijan, Ghilan, and Mazanderan; e. by Khorasan. On the s. and w., the boundaries are not definite. In the extreme n. are the Elburz Mountains, and throughout the province are several other chains, all extending from s.e. to n.w. A great portion of the surface of the province consists of elevated table-lands, but there are also numerous fertile valleys traversed by rivers. Many of the rivers of **I**. are swallowed up by sandy tracts into which they flow. The chief towns of the province are the capital Teheran and Ispahan.

IRAK-ARABI, *ē-rāk'ār'a-bē*, or **IRAK EL ARABI**, *ē-rāk'ēl ār'a-bē*: district in Turkey in Asia, the ancient Babylonia (q.v.), comprising the ruins of the ancient cities of Babylon, Selucia, and Ctesiphon. During the last 250 years of the caliphate, this was the poor remnant of their once wide dominion which remained to the successors of Mohammed.

IRAN, *ē-rān'*: modern native name of Persia: see **AYRAN** (Race): **PERSIAN LANGUAGE AND LITERATURE**.

IRANIAN, a. *ī-rā'nī-ān* [*Iran*, the name given to Persia by its people]: of or relating to Persia: also **IRANIC**: see **IRAN**.

IRASCIBLE, a. *ī-rās'sī-bl* [Sp. and F. *irascible*; It *irascibile*, irascible—from mid. L. *irascib'ilis*—from L. *iras-cī*, to be angry (see **IRE**)]: easily provoked; prone to anger; irritable. **IRAS'CIBLY**, ad. *-blī*. **IRAS'CIBLENESS**, n. *-bl-nēs*, or **IRAS'CIBIL'ITY**, n. *-bīl'ī-tī*, the quality of being easily inflamed by anger.

IRAWAD'I: see **IRRAWADDY**.

IRBIT, *īr-bīt'*: district town of the govt. of Perm, e. Russia, since 1775; founded (1635) by Russian emigrants. The town is on the rivers Irbit and Nitza, 1,760 m. from St. Petersburg. A large part of it was burned 1879. It is remarkable for its extensive fair, the largest in Russia, after that of Nijni-Novgorod. The annual fair, from Feb. 27 till the end of March, was instituted more than 200 years ago, and attracts about 10,000 merchants and visitors from Russia, Siberia, Persia, Bokhara, etc. The principal

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goods are cloths, silk stuffs, brocades, sugar, coffee, china, and hardware from Russia; tea and nankeen from China, through Kiachta; furs and fish from Siberia; cotton stuffs from Bokhara, etc. The whole quantity of goods brought to market is valued at £6,500,000, abt. \$32,000,000. Pop. abt. 5,000.

IRE, n. *ir* [F. *ire*, anger—from L. *irā*: AS. *yrre*, anger: Fin. *ari*, snarling like a dog: Dan. *irre*, to tease, to incite]: anger; wrath. IRATE, a. *ī-rāt'*, angry, enraged. IRE'FUL, a. *-fāl*, filled with anger. IRE'FULLY, ad. *-lī*.—SYN. of 'ire': passion; choler; rage; resentment; fury.

IREDELL, *ir'del*, JAMES: 1751, Oct. 5—1799, Oct. 20; b. Lewes, England: lawyer. He removed to Edenton, N. C., 1768, was admitted to the bar 1770, was deputy collector and collector of the port of Edenton several years, became judge of the superior court of N. C. 1777, attor.-gen. 1779, commissioner to compile and revise the state laws 1787, and associate justice of the U. S. supreme court 1790.—His son, JAMES I., Jr.: 1788, Nov. 2—1853, Apr. 13; b. Edenton: lawyer; served many years in the state legislature, was speaker of the house and judge of the superior court, elected gov. of N. C. 1827, and U. S. senator 1828; was many years reporter of supreme court decisions, took part in collecting and revising the laws of N. C., and published *Treatise on the Law of Executors and Administrators*, and *Digest of all the Reported Cases in the Courts of North Carolina*, 1778 to 1845 (Raleigh, 1839-46).

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IRELAND, *ir'land*: island, forming part of the United Kingdom of Great Britain and Ireland; lat. $51^{\circ} 26'$ — $55^{\circ} 23'$ n., and long. $5^{\circ} 20'$ — $10^{\circ} 23'$ w. It is washed on the n w. and s. by the Atlantic; and on the e. by a strait, called at different places the North Channel, the Irish Sea, and St. George's Channel, which separates it from the larger island of Great Britain. Its greatest length, from Fair Head in Antrim to Crow Head in Kerry, is 306 m., but its greatest meridional length is not more than 225; its greatest breadth, between the extreme points of Mayo and Down, is 182 m., but between Galway Bay and Dublin, it is not more 120. I. is divided into the four provinces of Ulster, Leinster, Munster, and Connaught; which are subdivided into 32 counties. Area. about 32,583 sq. m., of which 15,464,825 acres are arable land; 4,357,338 acres are uncultivated; 339,858 are covered with wood; 49,236 are occupied by towns of 2,000 inhabitants and upward; while the lakes and waters cover 627,464 acres. In 1881 there were 577,739 agricultural holdings, of which only 12,600 were rented above £100. Pop. (1871) 5,412,377; (1881) 5,174,836. The table shows the area and population in 1881, 1891 and 1901.

Physical Aspect.—I. is of oblong form, and like Great Britain, the e. coast is comparatively unbroken, while the w., n., and s. are deeply indented. It is an undulating or hilly country—less rugged than the Highlands of Scotland, and not so tame as the eastern portion of England. Its hills are more rounded than abrupt, and not so much in ranges as in detached clusters round the coasts. These hilly tracts rarely extend more than 20 m. inland, and they seem to form a broad fringe round the island; while the interior appears as a basin composed of flat or gently swelling land. The principal ranges are the Mourne Mountains in Down, which attain their highest elevation in Slieve Donard, 2,796 ft. above the sea; the mountains of Wicklow, 3,039 ft.; and Macgillicuddy Reeks in Kerry, which, in the peak of Carran-Tual, the loftiest point in Ireland, reach 3,414 ft. The purely flat or level portions of the island, except some fine tracts of fertile valley-land in Kilkenny, Tipperary, and Limerick, consist mainly of *bog* or morass, which occupies, according to Dr. Kane, 2,830,000 acres, or about a seventh part of the entire superficies. The largest of these morasses is the Bog of Allen, which stretches in a vast plain across the centre of the island, or over a large portion of Kildare, Carlow, King's, and Queen's counties—having a summit elevation of 280 ft. (see ALLEN, BOG OF). Extensive tracts of deep wet bog occur also in Longford, Roscommon, and other counties, and give a peculiarly dreary and desolate aspect to the scenery. Notwithstanding the quantity of water in these bogs, they exhale no miasma injurious to health, owing to the large quantity of tannin which they contain.

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PROVINCES AND COUNTIES.	Area in Stat. Acres	Popula- tion, 1881.	Popula- tion, 1891.	Popula- tion, 1901.
LEINSTER.				
Carlow	221,344	46,568	40,899	37,748
Dublin	236,895	418,910	429,141	157,568
Kildare	418,496	75,804	69,988	63,566
Kilkenny	509,732	99,531	87,154	79,159
King's	493,985	72,852	65,408	60,187
Longford	269,409	61,009	52,553	46,672
Louth	202,123	77,684	70,852	65,820
Meath	579,861	87,469	76,616	67,497
Queen's	424,854	73,124	64,639	57,417
Westmeath	453,453	71,798	65,028	61,629
Wexford	576,588	123,854	111,536	104,104
Wicklow	500,178	70,386	61,934	60,824
Total	4,876,918	1,279,989	1,195,718	1,152,829
MUNSTER.				
Clare	327,994	141,457	123,859	112,334
Cork	1,849,686	495,607	436,641	404,611
Kerry	1,685,718	201,039	178,919	165,726
Limerick	689,842	180,632	158,563	146,098
Tipperary	1,061,731	199,612	172,882	160,232
Waterford	461,552	112,768	98,130	87,187
Total	6,067,723	1,391,115	1,168,994	1,076,188
ULSTER.				
Antrim	763,749	445,860	427,968	196,090
Armagh	328,086	163,177	143,056	125,392
Cavan	477,399	129,476	111,679	97,541
Donegal	1,197,154	206,035	185,211	173,722
Down	614,730	248,190	266,893	205,889
Fermanagh	457,349	84,879	74,037	65,430
Londonderry	522,315	164,991	151,666	144,404
Monaghan	319,741	102,748	86,089	74,611
Tyrone	806,658	197,719	171,278	150,567
Total	5,483,201	1,743,023	1,617,877	1,582,826
CONNAUGHT.				
Galway	1,569,505	242,005	214,256	192,549
Leitrim	302,363	90,372	78,379	69,343
Mayo	1,300,731	245,212	218,406	199,166
Roscommon	607,691	132,490	114,194	101,791
Sligo	461,796	111,578	98,338	84,083
Total	4,392,086	821,657	723,573	646,932
General total	20,819,928	5,174,836	4,706,162	4,458,775

Hydrography.—The principal river of I., and the largest in the United Kingdom, is the Shannon (q.v.). The streams which drain the e. part of the central plain are the Liffey and the Boyne; the s.e. part, the Suir, the Barrow, and the Nore; while the waters of the n.e. part are collected into Lough Neagh, chiefly by the Blackwater, and thence discharged into the sea by the Lower Bann. The rivers *external* to the great central plain are necessarily short. The principal are the Erne, flowing n.w.; the Foyle and the Bann, n.; the Lagan, n.e.; the Slaney, s.e.; and the Bandon, Lee, and Blackwater, flowing eastward through the county of Cork, the most southern county in the island. None of these rivers are naturally

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of importance to navigation. The Shannon, however, has been made navigable to its source by means of locks and lateral cuts; the Barrow, by similar means, to Athy; the Foyle, by canal, to Strabane; and several of the others have been artificially united by such lines as the Lagan, Newry, Ulster, Royal, Grand, Athy, and other canals—which now intersect a considerable portion of the island.

The lakes of I. (called loughs) are, as might be expected from the surface-character of the country, both numerous and extensive in proportion to the size of the island. The largest is Lough Neagh in Ulster, 100,000 acres. The other loughs of consequence are Loughs Erne and Derg, also in Ulster; Conn, Mask, and Corrib, in Connaught; the Allen, Ree, and Derg, expansions of the river Shannon, and the lakes of Killarney (q.v.) in Kerry.—The bays and salt-water loughs which indent the island are numerous and of importance. About 70 are suitable for ordinary purposes of commerce; and there are 14 in which the largest men-of-war may ride in safety. The principal are Loughs Foyle and Swilly, on the n. coast; the Bays of Donegal, Sligo, Clew, and Galway, the estuary of the Shannon, Dingle Bay, and Bantry Bay, on the w.; the harbors of Cork and Waterford, on the s.; Wexford harbor, the Bays of Dublin, Drogheda, and Dundalk, and Loughs Carlingford, Strangford, and Belfast, on the e.—The islands are generally small and of little importance. On the e. coast, the largest is Lambay, about $2\frac{1}{2}$ m. off the coast of Dublin; on the s. and s.e. coasts are Clear Island, the Saltees, a group of islets dangerous to navigators, about 8 m. s. of the Wexford coast, indicated by a floating light, and Tuscar Rock, about 8 m. e. of Carnsore Point, also a dangerous ledge, 20 ft. above the sea, and surmounted by a lighthouse after the model of the Eddystone; on the w. coast, the Skelligs, Valentia, the Blaskets, the South Arran Isles, Innisbofin, Innisturk, and Clare, Achil or 'Eagle' Island, and the Inniskea Islets; on the n. coast, the North Arran Isles, the Tory Isles, and Rathlin.

Geology.—A great series of grits and slates of Cambrian age occur in the s.e. of I.; the upper portion contains a few fossils of zoophytes and worms. Lower *Silurian strata* rest unconformably on the Cambrian rocks in the same district. They consist of flags, slates, and grits many thousand feet in thickness, extending over large portions of Kildare, Wicklow, Wexford, and Waterford. Several detached patches occur w. of this district, forming the Keeper, Arra, and Inchiquin Mountains. A tract of similar beds stretches from the centre of I., near the source of the Shannon, to the coast of Down. The strata in proximity to the Wicklow and Dublin granites are converted into gneiss and mica-slate. This is the condition of all the beds in the n.w., in Donegal, Tyrone, and Mayo; they appear to be a continuation of the highly altered strata of n. Scotland. Detached portions of Upper Silurian measures occur on the w. side of the island, in Kerry, Galway, and Mayo.

Between the Silurian and Old Red Sandstone is an

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enormous thickness (11,000 ft.) of sandstone grit and shale in Kerry and Cork. These strata are almost wholly unfossiliferous.

Old Red Sandstone strata, consisting of red and yellow sandstone and slate, cover a large tract of the s. of I., stretching almost continuously from the extreme w. of Cork and Kerry into Waterford and Kilkenny, being stopped by the Silurian rocks of Wexford and Carlow. Along the bases of the Silurian mountains of the s. centre of I., and in the s. portion of the county of Cork, occurs a great thickness of sandstones, which have hitherto yielded no fossils; some geologists refer these to the Old Red series, others class them as Lower Carboniferous.

The *Carboniferous Limestone* is extensively developed in I., occupying the whole of the centre of the country, except in those places above alluded to, where the older rocks appear on the surface. This great tract is an extensive plain covered with drift, and with peat-moss and freshwater marl, in which are found the remains of *Megaceros Hibernicus* and *Bos longifrons*. In Kerry, Cork, and Waterford, the strata are very much contorted, the coal-seams are changed into anthracite, and so squeezed and crushed as to be got only in small dice-like fragments. Further n., the strata are nearly horizontal, but the coal-fields are limited, and the seams generally of inconsiderable thickness; they occur chiefly in Tipperary, Kilkenny, Tyrone, and Antrim.

Small deposits of *Permian strata* are found at Ardree in Tyrone, and at Cultra near Belfast; the sandstones of Roan Hill, near Dungannon are probably of the same age. The red and variegated marls containing beds of gypsum and rock-salt, on the coast n. from Belfast, are probably *Triassic*. Resting on these marls are a few thin beds of *Lias*. *Cretaceous* strata occur in Antrim and Derry.

Climate.—Though the climate of I. bears, as might have been expected, a strong resemblance to that of Great Britain (q.v.), it has yet a peculiar character, owing to the marked difference in the configuration of its surface, its greater distance from the continent of Europe, and its being more completely bathed in the warm waters of the Gulf Stream. The mean annual temperature of the central parts of the country is about $50^{\circ}\cdot 0$, rising in the s. to $51^{\circ}\cdot 5$, and falling in the n. to $48^{\circ}\cdot 5$. There are thus $3^{\circ}\cdot 0$ of difference between the extreme n. and s., and it may be noted that, speaking generally, this difference is constant through all seasons of the year. The mean temperature in winter is $41^{\circ}\cdot 5$; in spring, $47^{\circ}\cdot 0$; in summer, $60^{\circ}\cdot 0$; in autumn, $51^{\circ}\cdot 0$.

The annual rainfall averages 25 to 28 inches, except in the neighborhood of hills, where the precipitation is considerably augmented; thus, at Valentia, in Kerry, the rainfall of 1861 amounted to 73 inches, and doubtless this large fall was greatly exceeded in places among the higher hills. The rainfall in winter, particularly in the w., is greatly in excess of the other seasons, owing to the low temperature of the surface of the ground during winter,

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which suddenly chills the warm and moist s.w. winds that prevail, especially at this time of the year, and condenses their vapor into rain. Since in Great Britain the chief mountain ranges are in the w., it follows that over the whole e. slope of that island the climate is drier, the amount and frequency of the rainfall much less, and the sunshine more brilliant than in the w. In I., on the other hand, the hills in the w. do not oppose such a continuous barrier to the progress of the s.w. winds, but are more broken up and distributed in isolated groups. It follows that the sky is more clouded, and rain falls more frequently in I., and the climate is thus rendered more genial and fostering to vegetation; hence the appropriateness of the name 'Emerald Isle.' Again, owing to its greater distance from the continent, the parching and noxious e. winds of spring are less severely felt in I., because the n.e. winds have acquired more warmth and moisture in their progress. On this account the most salubrious spring climates in England, Scotland, and I. are in the s.w. of the respective countries. Thus, Queenstown, in the s.w. of I., has an average spring temperature as high as $50^{\circ}0$, which is about the highest in the British Islands, and nearly $3^{\circ}0$ higher than the e. of Kent, nearly in the same latitude.

Since wheat ripens in these latitudes with a mean summer temperature of $56^{\circ}0$, it follows that the climate of I. is adequate to the successful cultivation of the finer sorts of grain, which are subjected to much less risk in backward seasons than is the case in n. Britain, where the summer temperature is only a degree and a half from the extreme limit of wheat-cultivation. Also, considering its remarkably open winters, which lengthen out the period of grazing, its mild and genial climate through all the seasons, and its comparative freedom from droughts, it will be seen that its climate is equally well adapted for rearing of cattle. These considerations, combined with the fertility of the soil, open for I., as far as the physical conditions are concerned, a prospect of national prosperity, based on remarkable, though as yet only partially developed agricultural resources.

Agriculture.—Until the middle of last century, I. was almost exclusively a pasturing country. The result of this state of things is the wretchedly poor system of agriculture, from which I. still suffers largely. The extreme smallness of the large majority of farms, the lack of capital, insecurity of tenure, and the fear that rents would be raised if improvements were made by the tenants, have kept the agriculture of I. in a very backward condition. It is to be hoped that new arrangements in the direction indicated by the Land Act of 1881 may bring better relations between landlord and tenant, and promote agricultural progress.

The number of holdings in 1891 was 572,640, only 89,019 of these containing over 50 acres. The number of acres devoted to various crops in 1892 was as follows: cereals 1,494,816; green crops 1,174,816; flax 70,642; clover and

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grass 1,252,979; pasture 11,142,287. There has been a large decrease in the area sown with corn and green crops, and a corresponding increase in the area devoted to clover, grass, and pastures. Oats, barley, and wheat, in the order named, are the principal cereals grown. Under green crops are included potatoes, turnips, cabbages, carrots, vetches, and similar crops. The extent of land set apart for potatoes, the staple food of the peasantry, has decreased largely: in 1870, potatoes occupied 1,041,902 acres; in 1880, 842,671 acres; and in 1890, 787,152 acres. In 1892 the number of farm animals stood as follows: horses, 539,000; cattle, 4,531,000; sheep, 4,828,000; pigs, 1,116,000. In the same year bee-keeping resulted in a yield of about 329,000 pounds of honey and nearly 8,000 pounds of manufactured wax.

Fisheries.—In fisheries, I. is supposed to possess an almost inexhaustible mine of wealth; but they are strangely neglected. The surrounding seas abound with cod, ling, hake, herrings, pilchards, etc., and the rivers with salmon; yet the Irish markets are extensively supplied with cured fish from Scotland and the Isle of Man. The number of vessels and boats engaged in the sea-fisheries (1846) was 20,000, employing 100,000 men and boys; in 1861 the fisheries employed 12,035 boats manned by 48,000 men, and in 1891 only about 30,000 men were so engaged, the decrease being due in some measure to emigration and the demand for seamen, but chiefly to the distance of the most productive fishing-grounds from the centres of population. The total value of salmon exported in 1895 was estimated at about £500,000.

Manufactures.—According to M'Culloch, 'Ireland is not, and never has been, a manufacturing country. Its unsettled turbulent state, and the general dependence of the population on land, have hitherto formed insuperable obstacles to the formation of great manufacturing establishments in most parts of the country; while the want of coal, capital, and skilful workmen and the great ascendancy of England and Scotland in all departments of manufacture, will, their is reason to think, hinder Ireland from ever attaining eminence in this department.' Linen is the staple manufacture, of which Belfast and the surrounding districts of Ulster are chief seats. In 1891, the number of spindles in flax manufacture was 947,100, and power-looms 24,900. The manufacture of woolen stuffs is limited to a few localities, as Dublin, Cork, Waterford, Queens county, and Kilkenny. Silk and cotton manufactures also are carried on, but only to an inconsiderable extent. In 1890 about 1,060 flax-scutching mills were in operation. In the 17th century the woolen manufactures of I. were in a flourishing condition, producing principally frieze and flannel, but prohibitive and restrictive governmental methods almost destroyed the industry before the end of the century. A great source of employment for women has of late years sprung up in the north of I., in the working of patterns on muslin with the needle. Belfast is the centre of

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this manufacture, which employs about 300,000 persons, chiefly women and girls, scattered through all the counties of Ulster, and places in the other provinces. About 40 firms are in the trade, and the gross value of the manufactured goods amounts to about £1,400,000. Silk manufactures, since their introduction by French emigrants in the beginning of the last century, have been almost confined to Dublin; but poplin is now extensively manufactured there, and in a few other towns.

Commerce and Shipping.—The exportation of the agricultural produce of the country has always been the chief commercial business carried on in Ireland. By far the greater part of this trade is with Great Britain. It cannot, however, be traced later than 1825, when the commercial intercourse between Great Britain and I. was assimilated by law to the coasting-traffic between the different ports of England, except in the single article of grain. Of vessels engaged in trade with foreign countries and the colonies in 1895 there entered 1,212, but cleared only 147. In 1890 a total of over 41,000 vessels, with a gross burden of nearly 9,000,000 tons, were engaged in the trade with England.

Government.—The government of I., since the Union 1801, is identical with that of Great Britain. It is represented in the imperial parliament by 28 members of the house of lords, and 103 of the house of commons. The executive govt. is invested in a lord-lieut., assisted by a privy council and chief sec., and the law is administered by a lord chancellor, a master of the rolls, and 14 judges of the supreme court of judicature, which has two divisions—the high court of justice, with several subdivisions, and the court of appeal. The land court, for revising decisions in controversies between landlord and tenant, was created under the Land Act of 1881, and has three commissioners or judges in Dublin, besides sub-commissioners in various country districts. County and municipal matters are conducted nearly as in England, with the exception of an armed national constabulary or police force of about 13,000 men, with 400 horses.

Religion.—A vast majority of the inhabitants of I. are Rom. Catholics; but the Episcopal Church, a branch of the Church of England, was the Established Church till 1871, Jan. It now exists independently as the Church of Ireland. In 1891 the number of Rom. Catholics was 3,547,307; Prot. Episcopalians, 444,974; Presbyterians, 55,500; Methodists, 56,866; other denominations, including Jews, numbered 1,798.

Education.—Dublin University (q.v.) was founded 1591; the Royal University of I., substantially an examining board like London Univ., where degrees are open to all comers, was founded by royal charter 1880, and supersedes the Queen's Univ., to which the Queen's colleges of Belfast, Cork, and Galway (opened 1849) were subordinate. The Rom. Cath. Univ. was founded 1854; and Maynooth College (q.v.) 1795, for the education of Rom. Cath. priests. The primary schools of I. are mostly under the management of the Commissioners of National Educa-

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tion.' This system, established 1833, proceeds on the principle that 'the schools shall be open alike to Christians of every denomination; that no pupil shall be required to attend any religious exercise, or receive any religious instruction which his parents may not approve; and that sufficient opportunity shall be afforded to pupils of each religious persuasion to receive separately such religious instruction as their parents or guardians may think fit.' In 1834 there were 1,106 schools, with 145,251 pupils; (1850) 4,547 schools, with 511,239 pupils; (1870) 6,806 schools, with 998,999 pupils. Between these years the parliamentary grant rose from £20,000 to £408,388. In 1880 there were 7,950 national schools, with a total of 1,083,020 pupils; of whom 855,057 were Rom. Cath.; 115,629 Presb.; and 102,218 Episc. children. The parliamentary grant 1880-81 was £722,366. In 1891 there were 8,346 elementary schools, with 544,307 pupils.

History.—I. seems before the dawn of history to have been peopled by Iberian or pre-Aryan tribes, like other parts of w. Europe. Irish legends record the successive invasions of five races, including Nemedians, Firbolgs, Tuatha De Danann, and Milesians—all apparently Celtic, and the Milesians being presumably the Scots. Although I., styled *Iernis*, is mentioned in the Greek poem five centuries before Christ, and by the names of *Hibernia* and *Juverna* in various foreign pagan writers, little is known with certainty of her inhabitants before the 4th c. after Christ, when, under the appellation of *Scoti*, or inhabitants of *Scotia*, they became formidable by their descents on the Roman province of Britain. These expeditions were continued and extended to the coasts of Gaul till the time of Laogaire MacNeill, monarch of Ireland (A.D. 430), in whose reign St. Patrick (q.v.) attempted the conversion of the natives. Although Christianity had been previously introduced in some parts of the island, St. Patrick encountered great obstacles, and the new faith was not fully established in I. till about a century after his decease.

From the earliest period, each province of I. appears to have had its own king, subject to the *Ard-Righ* or monarch, to whom the central district called Meath was allotted, and who usually resided at Tara. Each clan was governed by a chief selected from its most important family, and who was required to be of mature age, capable of taking the field efficiently when occasion required. The laws were peculiar in their nature, dispensed by professional jurists styled *Brehons*, who, as well as the poets and men of learning, received high consideration, and were endowed with lands and important privileges. Cromlechs, or stone tombs and structures, of large uncemented stones, ascribed to the pagan Irish, still are seen in various parts of Ireland. Lacustrine habitations, or stockaded islands, styled *Crannógs* (q.v.) or *Crannoges*, in island lakes, also appear to have been in use there from early ages. Of articles of metal, stone, clay, and other materials in use among the ancient Irish, a large collection has been formed in the Museum of the Royal Irish Acad. at Dublin. It is re-

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markable that a greater number and variety of antique golden articles of remote age have been found in I. than in any other part of n. Europe; and the majority of the gold antiquities illustrative of British history, now preserved in the British Museum, are Irish.

In the 6th c., extensive monasteries were founded in I., in which religion and learning were zealously cultivated. From these establishments, numerous missionaries issued during the succeeding centuries, carrying the doctrines of Christianity under great difficulties into the still pagan countries of Europe, whose inhabitants they surprised and impressed by their self-devotion and asceticism. Many students of distinction from England and the continent frequented I., and received gratuitous instruction at this period. To these ages has been ascribed the origin of the peculiar style of art-ornamentation, specimens of which are extant in Irish manuscripts, and which was long erroneously assigned to the Anglo-Saxons, who now appear to have been indebted to the Irish mainly for Christianity, and entirely for letters. Among the eminent native Irish of these times were Columba (q.v.), or Colum Cille, founder of the celebrated monastery of Iona; Comgall, who established the convent of Bangor, in the county of Down; Ciaran of Clonmacnoise; and Adamnan (q.v.), abbot of Iona, and biographer of Columba. Of the Irish missionaries to the continent, the more distinguished were Columbanus (q.v.), founder of Bobio; Gallus of St. Gall, in Switzerland; Dichuill, patronized by Clotaire; and Ferghal, or Virgilius, evangelizer of Carinthia. The progress of Irish civilization was checked by the incursions of the Scandinavians, commencing toward the close of the 8th c. and continuing more than 300 years. Establishing themselves in towns on the e. coast of I., with the assistance of friendly native tribes, the Scandinavians continued to make predatory expeditions into the interior until their signal overthrow at the battle of Clontarf, near Dublin (1014), by Brian, surnamed Borumha, monarch of Ireland. From the close of the 8th to the 12th c., I., though harassed by the Scandinavians, produced many writers of merit, among whom were Ængus, hagiographer; Cormac Mac-Cullenan, King of Munster and Bishop of Cashel, reputed author of *Cormac's Glossary*; Cuan O'Lochain; Gilla Moduda; Flan of Monasterboice; and Tighernach, annalist. The Irish scholars who during these times acquired highest eminence on the continent were Joannes Erigena, favorite of Charles the Bald of France; Dungal, one of the astronomers consulted by Charlemagne; Dichuill, geographer; Donogh, or Donatus, Bp. of Fiesole; and Marianus Scotus. Of the state of the arts in Ireland during the same period, elaborate specimens remain in the shrine of St. Patrick's bell, the Cross of Cong, in Mayo (12th c.); the Limerick and Cashel crosiers, and the Tara brooch, all displaying minute skill and peculiar style. To much earlier times is assigned the *Book of Kells* (see KELLS), a Latin copy of the four Gospels, in the library of Trinity College, Dublin, which Westwood has pronounced the

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most elaborately executed manuscript of early art now in existence, and of portions of which fac-similes are given in his work *Palæographia Sacra Pictoria*. Of the Irish architecture of the period, examples remain at Cashel. The well-known round towers of I. are believed to have been erected about this era as belfries, and to serve as places of security for ecclesiastics during disturbances. The skill of the Irish musicians in the 12th c. is attested by the enthusiastic encomiums of Giraldus Cambrensis on their performances. The Scandinavians left in I. no traces of civilization except coins struck at Dublin, Waterford, and Limerick, in which towns they were mostly subject and tributary to the natives.

The first step toward an Anglo-Norman descent upon I. was made by Henry II., who obtained, 1155, a bull from Pope Adrian IV., authorizing him to take possession of the island, on condition of paying to the papal treasury a stipulated annual revenue. Political circumstances prevented Henry from entering on the undertaking till 1166, when Dermot MacMurragh, the deposed king of Leinster, repaired to him, and obtained authority to enlist such of his subjects as might be induced to aid him in attempting to regain his forfeited lands. Dermot, returning to I. 1169, with the aid of his foreign mercenaries, and still more numerous Irish allies, succeeded in recovering part of his former territories, and in capturing Dublin and other towns on the e. coast. After his death 1171, the succession to the kingdom of Leinster was claimed by his son-in-law, Richard FitzGislebert, Earl of Pembroke, surnamed 'Strongbow.' In the following year, King Henry, with a formidable armament, visited I., received homage from several minor native chiefs, and from the chief adventurers, granting to the latter charters authorizing them, as his subjects, to take possession of the entire island, in virtue of the grant made to him by the pope. The chief Anglo-Norman adventurers, FitzGislebert, Le Gros, De Cogan, De Lacy; and De Curci, encountered formidable opposition before they succeeded in establishing themselves on the lands which they thus claimed. The government was committed to a viceroy, and the Norman legal system was introduced into such parts of the island as were reduced to obedience to England. The youthful Prince John was sent by King Henry into I. 1184; but the injudicious conduct of his council having excited disturbances, he was soon recalled to England. John, when king, made an expedition into I., 1210, to curb the refractory spirit of his barons, who had become formidable through their alliances with the natives. During the 13th c., the principal Anglo-Norman adventurers succeeded in establishing themselves, with the feudal institutions of their nation, in some parts of I., by the assistance or suppression of native clans. The Fitzgeralds, or Geraldines, acquired almost unbounded power in Kildare and East Munster, or Desmond; the Le Botillers, or Butlers, in Ormond or West Munster; and the De Burghs, or Burkes, in Connaught. After the battle of Bannockburn, the native Irish of the

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north invited over Edward Bruce, and attempted to overthrow the English power in Ireland. The see of Rome, at the instigation of England, excommunicated Bruce with his Irish allies; but though his enterprise failed of success, the general result was a comparative collapse of the English dominion in Ireland. The descendants of the most powerful settlers gradually became identified with the natives, whose language, habits, and laws they adopted to so great an extent, that the Anglo-Irish parliament passed, 1367, the 'Statute of Kilkenny,' decreeing excommunication and heavy penalties against all those who followed the customs of, or allied themselves with, the native Irish. This statute, however, remained inoperative; and though Richard II., later in the 14th c., made expeditions into I. with large forces, he failed to effect any practical result; and the power and influence of the natives increased so much, that the authority of the English crown became limited to a few towns on the coast, and the district termed 'the Pale,' comprising a small circuit about Dublin and Drogheda.

In 1534, Thomas Fitzgerald, son of the Viceroy of Henry VIII., revolted, but not meeting with adequate support from his Anglo-Irish connections, he was, after a short time, suppressed and put to death. Henry received the title of 'King of Ireland,' 1541, by an act passed by the Anglo-Irish parliament in Dublin; and about the same period, some of the native princes were induced to acknowledge him as their sovereign, and to accept peerages. The doctrines of the Reformation met little favor either with the descendants of the old English settlers or with the native Irish. About the middle of the 16th c., Shane O'Neil, prince of the most powerful ancient family of Ulster, attempted to suppress his rivals, and to assume the kingship of that province, in which he was eventually unsuccessful; but after his death 1567, his successor received the title of Earl of Tirone from Elizabeth. The attempts of the English government in I. to introduce the Reformed faith and English institutions stirred up great dissensions in Ireland. Among the first to revolt was the Earl of Desmond, after whose death, 1583, his vast estates in Munster were parcelled out to English settlers. Soon after, the chief clans of Ulster took up arms; and in opposing them, the forces of Elizabeth, commanded by officers of high military reputation, encountered many reverses, the most serious of which was in 1598 at the battle of the Yellow Ford, near Armagh, where the English army was routed and its general slain. Philip III. of Spain, at the solicitation of the Irish chiefs, dispatched a body of troops to their assistance 1601, which, landing in the extreme s. instead of in the n., as had been expected, were unable to effect anything, and were constrained to surrender. Although Elizabeth was supported by numbers of native Irish, the northern chiefs, O'Neill and O'Donnell, held out till the queen's government came to terms with them 1603, recognizing them as Earls of Tirone and Tirconnell. In 1608, these noblemen, having apprehensions for their personal safety, quitted I.

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unexpectedly, and retired to the continent. Their withdrawal enabled James I. to carry out that project of parceling out the north of Ireland to Scottish and English settlers, which is usually known as the 'Plantation of Ulster.' The Irish took advantage of the contentions in England to rise in insurrection (1641) and massacre the Protestants. It is believed that nearly 40,000 fell victims to their fury. The country continued in a state of anarchy till 1649, when Cromwell completely subdued it. At the Revolution, the native Irish generally took the part of James II.; the English and Scotch 'colonists' of William and Mary; and the war was kept up for four years (1688-92). From this time till 1778, history records little beyond the passing of penal statutes against the Rom. Catholics. In 1778, parliament relaxed the stringent pressure of these acts; but the widely spread disaffection which they caused gave birth to numerous societies, resulting in the rebellion of 1798, which was not suppressed till 1800. On Jan. 1 of the following year, the legislative union of I. with Great Britain was consummated, and from this period its history merges in that of Great Britain. But see also FENIAN: HOME RULE: INCUMBERED ESTATES COURTS: LAND LEAGUE.

IRE'LAND, ARMS OF: insignia variously given by early writers. In the reign of Edward IV., a commission appointed to inquire what were the arms of Ireland, found them to be three crowns in pale. It has been supposed that these crowns were abandoned at the Reformation, from an idea that they might denote the feudal sovereignty of the pope, whose vassal the king of England was, as lord of Ireland. However, in a ms. in the Herald's College of the time of Henry VII., the arms of Ireland are blazoned azure, a harp or, stringed argent; and when they were for the first time placed on the royal shield on the accession of James I., they were thus delineated: the crest is on a wreath or and azure, a tower (sometimes triple-towered) or, from the port, a hart springing argent. Another crest is a harp or. The national flag exhibits the harp in a field vert. The royal badge of Ireland, as settled by sign manual 1801, is a harp or, stringed argent, and a trefoil vert, both ensigned with the imperial crown.

IRE'LAND, CHURCH OF: branch of the Prot. Episc. Church of England established on an identical basis under the provisions of the act of union taking effect 1801, Jan. 1; and disestablished and disendowed by act of parliament 1869 taking effect 1871, Jan. 1. On its establishment the C. of I. was permitted to assume control of the property as well as the management of the dioceses and parishes of the early Rom. Cath. Church in Ireland, and through these means it soon became wealthy and powerful. From the start it had the opposition of the authorities of the Rom. Cath. Church, who protested against the govt. maintenance of a Prot. state church whose adherents constituted a very small proportion of the population of Ireland, while 77 per cent. of the population belonged to the Rom. Cath. Church.

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The assumption by the C. of I. of the right of succession to the property and functions of the mediæval Rom. Church was an additional cause of grievance. Legislation was frequently invoked to bring about disestablishment, and the first advantage gained by the opponents of the C. of I. was in 1833 when parliament reduced the number of its archbishoprics from 4 to 2, and bishoprics from 18 to 10. These benefices had incomes estimated at \$650,000 to \$925,000. During the next 35 years a strong public opinion was developed against continuing the privileges of the C. of I.—which included the admission of its bishops into parliament as peers; and when (1868) Mr. Gladstone moved to disestablish the church, the house of commons adopted the resolution but the house of lords rejected it. This action was followed by a recommendation from the royal commissioners on the revenues and condition of the C. of I. for important reductions as to the benefices of the church. The church then held private endowments that had accumulated since 1660 amounting to \$2,500,000, and had received in public endowments, state grants, and revenues \$77,500,000. In 1869, Mar., Mr. Gladstone, who had become prime minister, introduced a new disestablishing and disendowing bill, which passed both houses of parliament, received the royal assent, and went into effect 1871, Jan. 1. The bill provided for the appointment of a board of commissioners of church temporalities in whom should be vested the whole property of the C. of I., with provisions for the future retention by the state of public endowments, grants, and revenues, the retention by the disestablished church of its private endowments, and compensation to various vested interests, including Maynooth College, the *regium donum* of the Presbyterians, and the incumbents of benefices. In 1870 a constitution for the disestablished church was adopted at a general convention in Dublin, under which the church has since been governed by a general synod consisting of a house of bishops (12) and a house of representatives (208 clerical and 416 lay members), and a 'representative church body,' in whom all the property of the church is vested, comprising 60 members; the archbishops of Armagh and Dublin, and the bishops of Meath, Down, Killaloe, Limerick, Tuam, Derry, Cashel, Kidmore, Cork, and Ossory *ex officio*, 36 elected members (12 clerical, 24 lay), and 12 co-opted.

IRELAND ISLAND: one of the Bermudas (q.v.).

IRELAND, JOHN: b. Burnchurch, Kilkenny co., Ireland, 1849, Sept. 11: Rom. Cath. arch-bp. He came to the United States 1849, and having received a primary education in the cathedral schools of St. Paul, Minn., entered, 1853, the preparatory seminary of Meximieux, France, and then the theol. seminary at Hyères; ordained priest 1861; was chaplain of a Minnesota regt. for a time in the civil war; became rector of the Cathedral at St. Paul, and was then, as he has been ever since, an active and successful organizer of temperance societies and advocate of temperance throughout the country. He represented Bp. Grace of St. Paul in the Vatican Council, 1870-1; was named by

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the Pope bp. *in partibus* and coadjutor to the bp. of St. Paul and was consecrated 1875, Dec. 21. He now engaged with characteristic energy in the work of promoting Rom. Cath. colonization in the Northwest, serving as one of the directors of a national colonization soc. He went to Rome 1887 in company with Bp. Keane of Richmond, Va., to present to the Pope their joint report on the need of a Rom. Cath. university at Washington; while in Europe he made a tour through the British Isles, lecturing on temperance. St. Paul having been raised to the rank of a metropolitan see, I. was installed as its abp. 1888, May 15. In 1891 arose the controversy about the 'Fairbault plan.' The parish priest of Fairbault, Minn., with the express approval of I., transferred to the city school board control of the parochial school, with reservation of the right of presenting the names of the teachers to be employed by the city: the teachers, however, were to be subject to the usual examination. The expense of conducting the school was to be borne by the city. It was understood that the parish priest would have the right to present to the board for teachers members of his own religious denomination, and in fact sisters of one of the religious orders; but there were to be no religious exercises, no religious instruction, no religious emblems in the school, and the same text books were to be used as in the regular public schools. Bishops in other parts of the country strongly disapproved the Fairbault plan (which was also put in practice in another town in Minnesota—Stillwater), and they lodged a complaint at Rome, charging I. with violation of the ecclesiastical law as expressed in the decrees of plenary councils of Baltimore; foremost among the episcopal opponents of the 'plan' was Abp. Corrigan of New York. I. was summoned to Rome, and after a protracted investigation of the matter, the 'congregation (commission) of the Propaganda' published its decree 1892, Ap. 30. The judgment was received with joyful acclamations by the partisans of the 'plan,' who declared it to be a full approval of I.'s action. Abp. Corrigan pointed out the words *tolerari protest* in the decree, and maintained that the judgment does not go one hair's-breadth outside of the concrete case, viz. the condition existing in Fairbault and Stillwater: That condition, says the decree, 'may be allowed to stand'; but with these two exceptions, the decrees of the Baltimore councils stand in all their force.

IRELAND, NEW: see NEW IRELAND.

IRENÆUS, *ir-ē-nē'ūs*: one of the most important of the ante-Nicene Christian writers: b. prob. between 120 and 140; d. prob. 202; an Asiatic by birth, but known in history solely through his connection with the Greco-Gaulish church of s. France, of which he was a bishop. He was a scholar of Polycarp, through whom he may be regarded as having sat at the feet of John the apostle and evangelist. I. was a minister of the church of Lyon under the bp. Pothinus, on whose martyrdom, in the persecution of Marcus Aurelius 177, he was himself elected to the same see,

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which he held for 25 years. It has been generally believed that he suffered martyrdom at Lyon in the persecution under Septimius Severus; though many modern writers doubt this. His principal, indeed almost his only complete, work is that cited usually as *Adversus Hæreses* (Against Heresies). It is directed against the Gnosticism of his own age, and is most valuable as a picture of the doctrinal and moral condition of that time. Most of his other works also were doctrinal, but they are known only by description or by fragments. The earliest edition of the works of this father is that of Erasmus (Basel 1526). They have been several times re-edited, the most prized edition being that of the Benedictine, Dom Massuet (Paris 1710, and Venice 1734).—His writings are of great value in relation to the theology of the Greek fathers, whose doctrinal forms largely took their shape from I., as those of the fathers of the Western Church did from Tertullian. The writings of I. give the earliest form now known of the Nicene (Niceno-Constantinopolitan) creed. The theology of I. has the Greek characteristics as distinct from the Latin; it is vital and dynamic rather than mechanical; pictorial and metaphorical in expression rather than logically precise. I.'s writings show him as of an earnest and pure, yet peace-making spirit.

IRENE, n. *ī-rē'nē*: in *Gr. myth.*, the goddess of peace.

IRENE: see PLANETOIDS.

IRENE, *ī rē'nē*, Byzantine Empress: 752–803; b. Athens. She was a poor but beautiful Albanian orphan, whose beauty and talent excited the admiration of Emperor Leo IV., who married her, 769. She is believed to have poisoned her husband 780, after which event she became regent during the minority of her son, Constantine VI., then only nine years of age. A great worshipper of images—in fact, this species of idolatry had during the lifetime of her husband caused her to be banished from the imperial palace—she quickly began to plot for their restoration, and with this purpose assembled a council of bishops at Constantinople 786, which, however, was broken up by the troops of the capital. A second council at Nice in the following year was more successful, and image-worship was re-established in the Eastern Church. In 788, her army was defeated in Calabria by Charlemagne, who threatened the Byzantine empire. In 790, her son Constantine, revolting against her autocratic sway, succeeded in taking the government out of her hands; but seven years afterward she caused him to be deprived of his eyes, and shut up in a dungeon, where he soon died. Still she was not free from anxieties. Her two favorites, Staauracius and Ætius, were constantly embroiled with each other, and their jealousies ceased only with the death of the former, 800. She now tried to secure her possession of the throne by a marriage with Charlemagne, but the Frank emperor had apparently no relish for a woman who had committed so many crimes, and the scheme proved abortive. Two years later, the patricians rebelled against

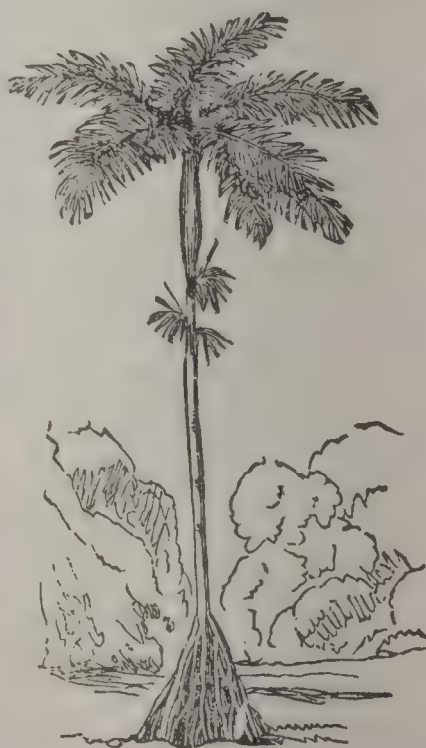
IRENIC—IRIARTEA.

her, placed her treasurer, Nicephorus on the throne, and suddenly seized her person, and banished her to the isle of Lesbos, where she was forced to spin for a livelihood, till she died of grief, in the following year. I. was a shrewd, able, and energetic ruler; but her crimes were so great and unnatural, that history can speak of her character only with reprobation. The Greek Church, however, on account of her zeal for image-worship has placed her among its saints.

IRENIC, a. *ī-rē'nīk*, or IRE'NICAL, a. *-ī-kāl* [Gr. *eirēnē*, peace]: fitted and designed to promote peace; conciliatory; peaceful. IRENICON, n. *ī-rē'nī-kon* [Gr. *eirēnīkon*, peaceful]: a plan or device for peace.

IRETON, *īr'ton*, HENRY: English general of the period of the Commonwealth: 1610–1651, Nov. 15; eldest son of German Ireton, of Attenton, in Nottinghamshire. He studied law at Oxford, but on the breaking out of the civil war, offered his services to the parliament. His connection with Cromwell, whose daughter, Bridget, he married in 1646, greatly advanced his interests. At Naseby, he was taken prisoner by Rupert, but rescued some hours afterward, when Cromwell's Ironsides decided the fortune of the day. I was one of the most implacable enemies of the king, and signed the warrant for his execution. When Cromwell passed over to Ireland to subdue that country, he was accompanied by his son-in-law, on whose vigor, judgment, and tact he placed much reliance. Cromwell's presence, however, was soon required in Scotland, and the complete subjugation of Ireland was intrusted to Ireton. His career was brief, but successful. He was, however, unsparing in his severity. He died of the plague before the walls of Limerick. His remains were conveyed to England, and interred in Westminster Abbey; but after the Restoration, they were disinterred, and burned at Tyburn. He left one son and four daughters.

IRIARTEA, *īr-ī-ār'tē-a*: genus of palms, all S. American, having lofty, smooth, faintly ringed stems, and pinnate leaves with somewhat triangular leaflets. The leaf stalks rise from a sheathing column. The PASHIUBA or PIZIUBA PALM (*I. exorhiza*), common in swamps and marshy grounds in the forests of the Amazon district, is remarkable for sending out roots above ground, which extend obliquely downward, and often divide into many rootlets just before they reach the soil; the tree as it grows



Pashiuba Palm (*Iriarte exorhiza*).

IRIDEÆ—IRIDOSMINE.

still producing new roots from a higher point than before, while the older and more central ones die, so that at last a lofty tree is supported as on three or four legs, between which a man may walk erect with a palm 70 ft. high rising straight above his head. The outer wood is very hard, so as to be used for harpoons; splits easily, and into perfectly straight laths; is excellent for floors, ceilings, shelves, etc.; and is exported to the United States for umbrella sticks.

IRIDEÆ, *ī-rīd'ē-ē*, or IRIDACEÆ, *ī-rīd ā'sē-ē*: natural order of endogenous plants, mostly herbaceous, though a few are somewhat shrubby. They have generally either root-stocks or corms. The leaves generally are sword-shaped, in two rows, and *equitant* (so placed that one seems to ride on the back of another). The perianth is 6-partite, colored, often very beautiful, in some regular, in others irregular. The stamens are three, with anthers turned outward. The ovary is inferior; there is one style, with three stigmas, which are often petal-like, and add much to the beauty of the flower. The fruit is a 3-celled, 3-valved capsule. Almost 600 species are known, the greater number natives of warm countries. They are abundant in s. Africa. *Iris*, *Gladiolus*, and *Crocus* are familiar examples of the order. Saffron is the principal economical product. Acridity is a prevailing characteristic, and some species are medicinal; but the corms and root-stocks of some are edible.

IRIDESCENCE: see under *IRIS*.

IRIDIUM, *ī-rīd'ī-ūm* (sym. Ir, eq. 196·7—sp. gr. 21·15): one of the so-called noble metals. It is occasionally found native and nearly pure in considerable masses among the Uralian ores of platinum, but is usually combined with osmium as an alloy in flat scales (see IRIDOSMINE). It is a very hard, white, brittle metal, which may be melted by the oxyhydrogen blowpipe, or by the heat of a voltaic current. In its isolated form after strong ignition it is unacted upon by any acid, or by aqua regia, but as an alloy, or if it has been reduced by hydrogen at a low temperature from its oxide, it dissolves in the latter fluid. It forms three oxides, IrO , Ir_2O_3 , and IrO_2 , which pass readily into one another, and thus occasion the various tints which solutions of the salts of I. assume—whence the name. Three sulphides, iodides, and chlorides exist, but only two chlorides have been separately isolated. I. may be fused with phosphorous, becoming as hard as before; and is used for pen points, contact points in telegraphy, and wearing parts of scientific instruments; also in porcelain painting. Recently it has been adopted in alloy with platinum as the material for the international standards of weight and length. I. was discovered by Descotils and by Tennant, 1803.

IRIDOSMINE, n. *ī-rīd'ōz'mīn* [Mod. L. *iridium*; *osmium*]: in *mineral*, an hexagonal opaque mineral of tin-white or light steel-gray color and metallic lustre; hardness, 6 to 7; sp. gr. 19·30 to 21·12; compos.: iridium, 43·28 to 70·40; osmium, 17·20 to 40·85, etc. It is found with plati-

IRIS.

num in Choco, South America, also in the Ural mountains, and in Australia: varieties, *Newjanskite* and *Sisserskite*.

IRIS, n. *ī'ris*, **IRISES**, n. plu. *ī'ris-ēz* [Gr. *iris*, or *īrīda*; L. *īris*, or *īrīdēm*, the rainbow, the flag: It. *īride*]: an appearance resembling the rainbow; the broad colored circle which surrounds the pupil of the eye—see **EYE**: the fleur-de-lis or flag flower—see **IRIS**, or **FLOWER-DE-LUCE**: a variety of rock-crystal. **IRIDEC'TOMY**, n. *-to-mī*, the act or operation of cutting out a portion of the iris for the purpose of forming an artificial pupil. **IRIDESCENT**, a. *ī'ri-dēs'sēnt* [F.—L.]: exhibiting a play of colors like those of the rainbow. **IRIDES'CENCE**, n. *-sēns*, exhibition of colors like those of the rainbow. **IRIDIUM**, n. *ī-rid'ī-ŭm*, an elementary body forming one of the most infusible of the known metals, of a steel-gray or lead color, and shining metallic lustre, found in the ore of platinum and in gold-washings—used in porcelain-painting and for the nibs of gold pens. **IRISATED**, a. *ī'ri-sā-tēd*, resembling the rainbow. **IRISED**, a. *ī'rist*, containing colors like those of the rainbow. **IRIDAL**, a. *ī'rid-al*, pertaining to or resembling the rainbow.

IRIS, *ī'ris*: in Classic Mythology: daughter of Thaumas and Electra. She is described (in Homer as a virgin goddess; but later writers say that she was married to Zephyrus, by whom she became the mother of Eros. She was employed like Mercury, as the messenger of the gods, and to conduct female souls into the shades, as he conducted those of men. She is frequently represented on vases, and in bas-reliefs as a youthful winged virgin, with a herald's staff and a pitcher in her hands. There can be no doubt that this myth originated in the physical phenomena of the rainbow, which was personified at first as the messenger of peace in nature.—IRIS is also the name of one of the Planets (q.v), discovered 1847.

IRIS, or **FLOWER-DE-LUCE**, *flow'ēr-dē-lōs*: genus of plants of nat. ord. *Iridēæ*, having the three outer segments of the perianth reflexed, the three inner arched inward, and three petal-like stigmas covering the stamens. The species are numerous, chiefly natives of temperate climates. The **YELLOW I.** or **CORN FLAG** (*I. pseudacorus*), is a well-known native of moist grounds, often spreading over a considerable extent of land, and conspicuous even at a distance by its tall leaves and large deep yellow flowers. The **STINKING I.** (*I. foetidissima*) is abundant in some southern parts of England, but does not extend far north: it has livid purple flowers, and the leaves have a very disagreeable smell. S. Europe produces a greater number of species, as also does N. America; among the latter is *I. versicolor* or **Blue Flag**, yielding Iridin, a strong liver stimulant. The flowers of most of the species are beautiful. Some of them have received much attention from florists, particularly *I. xiphium*, sometimes called **SPANISH I.**; *I. xiphoides*, or **ENGLISH I.**; and *I. Germanica*, or **COMMON I.**, all corm-rooted species, and all European. Many fine varieties have been produced. The **PERSIAN I.** (*I. Persica*), the **SNAKE'S-HEAD I.** (*I. tuberosa*), and the **CHALCEDONIAN I.** (*I. Susiana*) also

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JANSEN, *jăn'sên*, *D. yân'sên* (or JANSENIUS), **CORNELIUS**: Bishop of Ypres, author of the celebrated *Augustinus*: 1585, Oct. 28—1638, May 6; b. Akkoi, near Leerdam, Holland; of humble Rom. Cath. parentage; nephew of the well-know biblical commentator, and Bishop of Ghent, of the same name. The earlier studies of J. were divided between Utrecht, Louvain, and Paris. Having obtained a professorship at Bayonne, he applied himself with all his energy to scriptural and patristic studies, especially of the works of St. Augustine. From Bayonne, he returned to Louvain, where, 1617, he obtained the degree doctor, was appointed lecturer on Scripture, and was prominent in the affairs of the university, especially in a contest with the Jesuits, on occasion of which he was sent on a mission to the court of Madrid. In 1630, he was appointed to the professorship of Scripture; and having distinguished himself by a pamphlet on the war with France, *Mars Gallicus*, he was promoted, 1636, to the see of Ypres. In this city he died of the plague, just as he had completed his great work, the *Augustinus*, which proved the occasion of a theological controversy, the most important, in its doctrinal, social, and even political results, which has arisen since the Reformation. Its main object, in which it coincided with the scheme of doctrine already condemned in Bajus (q.v.), was to prove, by an elaborate analysis of St. Augustine's works, that the teaching of this Father against the Pelagians and semi-Pelagians (q.v.), on Grace, Free-will, and Predestination, was directly opposed to the teaching of the modern, and especially of the Jesuit schools (see **MOLINA**), which latter teaching he held to be identical with that of the semi-Pelagians. In the preface, he submitted the work to the judgment of the Holy See. On its publication 1640, being received with loud clamor, especially by the Jesuits, and at once referred to Rome for judgment, the *Augustinus*—together with the antagonist publications of the Jesuits—was prohibited by a decree of the Inquisition, 1641; in the following year, it was condemned as heretical by Urban VIII. in the bull *In Eminentî*. This bull encountered much opposition in Belgium; and in France, the *Augustinus* found many partisans, who were animated by a double feeling, as well of doctrinal predilection as of antipathy to the alleged laxity of moral teaching in the schools of the Jesuits, with whom the opposition to the *Augustinus* was identified. See **JESUITS**. The most eminent of the patrons of the *Augustinus* were the celebrated association of scholars and divines who formed the community of **PORT ROYAL** (q.v.), Arnauld, Nicole, Pascal, etc. Nevertheless the syndic of the Sorbonne extracted from the *Augustinus* seven propositions (subsequently reduced to five) which were condemned as heretical by Innocent X. 1653. Hence arose the celebrated distinction of 'right and of 'fact.' The friends of the *Augustinus*, while they admitted that in point of *right* the five propositions were justly condemned as heretical, yet denied that in point of *fact* these propositions were to be found

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in the *Augustinus*, at least in the sense imputed to them by the bull. A further condemnation was therefore issued by Alexander VII. 1656, which was rigidly enforced in France, and generally accepted; and 1668, peace was partially restored by Clement IX., at least all overt opposition was repressed by the iron rule of Louis XIV. The more rigid Jansenists, however, and at their head Antoine Arnauld, emigrated from France, and formed a kind of community in the Low Countries. On the death of Arnauld, 1684, the controversy remained in abeyance for some years; but it was revived with new acrimony by the well-known dispute on the so-called 'case of conscience,' and still more angrily in the person of the celebrated Quesnel (q.v.). whose *Moral Reflections on the New Testament*, though published with high ecclesiastical authority, at various intervals from 1671 till his death, 1710, was denounced to the pope, Clement XI., as a text-book of undisguised Jansenism. This pope issued, 1713, in the constitution 'Unigenitus,' a condemnation in mass of 101 propositions extracted from the *Moral Reflections*; which, however, met with great resistance in France. The death of Louis XIV. caused relaxation of the repressive measures. The regent, Duke of Orleans, was urged to refer the whole controversy to a national council, and the leaders of the Jansenist party appealed to a general council. The party thus formed, which numbered four bishops and many inferior ecclesiastics, were called, from this circumstance, the Appellants. The firmness of the pope, and a change in the policy of the regent, brought them into disfavour. An edict was published, 1720, June 4, receiving the bull; and even the parliament of Paris submitted to register it, though with a reservation in favor of the liberties of the Gallican Church. The Appellants mostly submitted, the recusants being visited with severe penalties; and on the accession of the new king, Louis XV., the unconditional acceptance of the bull was at length formally accomplished, the parliament being compelled to register it in a *lit de justice*. From this time forward the Appellants were rigorously repressed, and a large number immigrated to the Netherlands, where they formed a community, with Utrecht as a centre. The party still remaining in France persisted in their inveterate opposition to the bull, and many of them fell into great excesses of fanaticism: see CONVULSIONARIES.

In one locality alone, Utrecht and its dependent churches, can the sect be said to have had a regular and permanent organization, which dates partly from the forced emigration of the French Jansenists under Louis XIV., partly from the controversy about Quesnel. The vicar-apostolic, Peter Codde, having been suspended by Clement XI., 1702, the chapter of Utrecht refused to acknowledge the new vicar named in his place, and angrily joined themselves to the Appellant party in France, many of whom found a refuge in Utrecht. At length, 1723, they elected an abp., Cornelius Steenhoven, for whom the form of episcopal consecration was obtained from the

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French bp. Vorlet (titular of Babylon), who had been suspended for Jansenist opinions. A later Jansenist abp. of Utrecht, Meindarts, established Haarlem and Deventer as his suffragan sees; and in 1763, a synod was held, which sent its acts to Rome, in recognition of the primacy (though not the infallibility) of that see, which the church of Utrecht professes to acknowledge. Since that time, the formal succession has been maintained, each bishop, on being appointed, notifying his election to the pope, and craving confirmation. The popes, however, have uniformly rejected all advances, except on the condition of the acceptance of the bull *Unigenitus*, and the recent act of the Holy See, in defining as of Rom. Cath. faith the dogma of the Immaculate Conception of the Blessed Virgin Mary, has been the occasion of a new protest. The Jansenists of the Utrecht Church still number about 6,000, and are divided over 25 parishes in the dioceses of Utrecht and Haarlem. Their clergy are about 30 in number, with a seminary at Amersfoort. The Jansenists abp. of Utrecht has recently consecrated a bishop for the Old Catholic community in Germany: see DÖLLINGER: OLD CATHOLICS.

JANSENISM, n. *jăn'sěn-izm* [from *Jansen*, or *Jansen-ÿus*, Bishop of Ypres]: doctrines taught by Jansen regarding free-will and grace. **JAN'SENIST**, n. *-ist*, a follower of. See **JANSEN**, CORNELIUS.

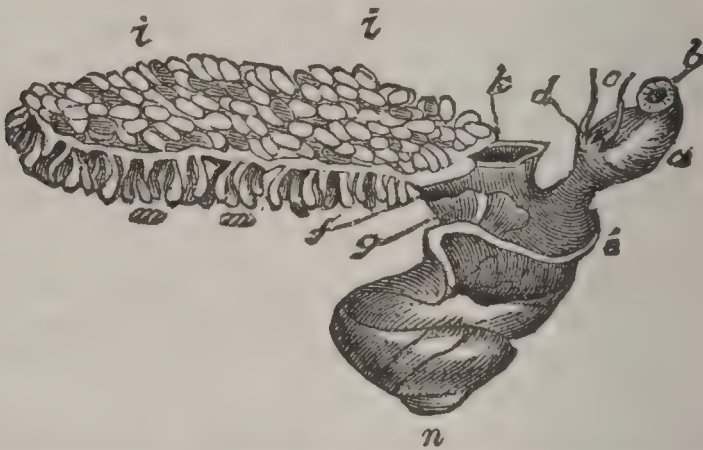
JANSSENS, *yâns'sêns* (or **JANSENS**); **VAN NUYSSEN**, **ABRAHAM**: Dutch painter: 1567–1632; b. Antwerp. He studied under Van Snellinck, and 1607 was dean of the master-painters. In his time he was considered inferior only to Rubens as a historical painter. J. is correct in drawing and bold in composition, but is not equal to Rubens in general faculty of color and freedom of touch. Many churches in Flanders possess pictures executed by him; the most famous are the *Burying of Christ* and a *Madonna and Child*, in the church of the Carmelites at Antwerp. There are good specimens of his style also in the galleries of Munich, Vienna, Dresden, and Berlin. The stories of J.'s dissolute life are baseless. He died at Antwerp.

JANSSENS, *yâns'sêns* (or **JANSENS**), **VICTOR HONORIUS**: 1664–1739; b. Brussels: painter. He spent 7 years studying painting with Volders, 4 years in the household of the Duke of Holstein, and 11 years in Rome, where he studied the works of Raphael, selected Albano for his model, became acquainted with Tempesta, in whose landscapes he frequently painted figures, and excelled all his contemporaries in his line. He painted a large collection of figure pieces, gallants and ladies in the costumes of the day, displaying good coloring and rich effects in his dresses and draperies. He remained in Rome 11 years, and on returning to Brussels, painted many large pictures for churches and palaces. In 1718 the emperor invited him to Vienna and made him court painter, but he re-

turned to Brussels, 1722, and restricted himself to altarpieces till his death.

JANSSENS, CORNELIS (sometimes **JOHNSON, CORNELIUS**): Dutch painter: abt. 1590–1665; b. Amsterdam. He went to England 1618, and painted many portraits for the king and the court. In 1648 he retired to Holland. J. is distinguished by fine touch, clear color, and careful finish. He painted usually on panel. His style is characterized by a very dark background, throwing into relief the carnations of his portraits.

JANTHINA, *jăn'thîn-a*: genus of gasteropodous mollusks, of the ord. *Scutibranchiata*, of the same family (*Haliotidæ*) with ear-shells. The shell is very similar in form



Common Oceanic Shell (*Janthina fragilis*).

Shell with the animal, the float expanded.

a, head; *b*, mouth; *c*, tentacles; *d*, eyes; *e*, border of the mantle at the entrance of the branchial cavity; *f*, foot, the posterior part, which is flat; *g*, lateral expansion of the mantle, provided for swimming; *k*, foot, anterior part forming a sort of pouch; *i, i*, bunch of aërated vesicles, serving to suspend the mollusk at the surface of the water; *m, m*, eggs suspended under the vesicular bunch; *n*, shell.

to that of a common snail, but thin and beautifully pellucid. These mollusks are remarkable as inhabitants of the open ocean, in which they swim at the surface of the water by means of a float formed of vesicles containing air, and secreted by the foot. To the under-surface of this float, the egg-capsules are attached. The vesicular float has no more anatomical connection with the animal than the shell has. The *Janthinæ* abound in the seas of warm climates, and are plentiful in the Mediterranean.

JANTU, *n. jăn'tû*: a machine in India for raising water for the irrigation of the land.

JANTY, JANTILY, JANTINESS: see **JAUNTY**.

JANUARIUS, *jăn-û-â'rî-ûs*, **SAINT**, or **SAN GENNARO**: martyr of the Christian faith under Diocletian: b. Benevento, or at least became bishop of that see in the latter part of the 3d. c. According to the Neapolitan tradition, he was taken prisoner at Nola; and the place of his martyrdom, 305, was Pozzuoli, where many Christians suffered the same fate. His body is preserved at Naples, in the crypt of the cathedral, and in a chapel of the same church

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are preserved also the head of the martyr, and two phials (*ampullæ*) supposed to contain his blood. On three festivals each year, the chief of which is the day of the martyrdom, Sep. 19, and on occasions of public danger or calamity, as earthquakes or eruptions, the head and the phials of the blood are carried in solemn procession to the high-altar of the cathedral, of the church of St. Clare, where, after a prayer of greater or less duration, the blood, on the phials being brought into contact with the head, is believed to liquefy, and in this condition is presented for the veneration of the people, or for the conviction of the doubter. It occasionally happens that a considerable time elapses before the liquefaction takes place, and sometimes it altogether fails. The failure is regarded as an omen of the worst import; and on those occasions when the miracle is delayed beyond the ordinary time, great alarm and excitement ensue in the congregation. See many documents in Vol. VI. of the Bollandist *Acta Sanctorum* for September.

JANUA'RIUS, ST., ORDER OF: order of knighthood, founded by King Charles of Sicily (afterward Charles III. of Spain), 1738, July 6; abolished after the French invasion of 1806; reintroduced 1814. The badge is a gold octagonal white and red enamelled cross, with gold lilies in the upper and side angles. The obverse represents St. Januarius in episcopal robes, with an open book. The round middle of the reverse shows a golden open book, and two phials partly filled with blood. The knights are either *Cavalieri di Giustizia*, who must count four noble generations, or *Cavalieri di Grazia*.

JANUARY, n. *jăn'û-âr-î* [L. *Januāriūs*, January—from *Jānūs*, an anc. Roman deity, represented with two faces, looking behind and before, with a key in one hand and a staff in the other]: first month of the year. It was, among the Romans, held sacred to Janus (q.v.), and was added to the calendar with February, by Numa. It was not till the 18th c. that J. was universally adopted by European nations (1752 in Britain legally) as the *first* month of the year, though the Romans reckoned it as such as far back as B.C. 251.—See **CALENDAR**.

JANUS, n. *jā'nus*: one of the most anc. Roman deities. J. with its feminine *Jana*, are—it is supposed—different forms of *Dianus* (probably the Sun) and *Diana* or *Luna* (certainly the Moon). The worship of Janus held a high place in the regards of the Romans. In every undertaking, his name was first invoked, even before that of Jupiter, which is the more singular as Jupiter was unquestionably the greatest of the Roman gods. Perhaps this fact points to the legend that Janus was the oldest of them, and ruled in Italy before any of the others came thither. He presided not only over the beginning of the year, but over the beginning of each month, each day, and the commencement of all enterprises. On New Year's Day people made each other presents of figs, dates, honey-cakes, sweetmeats, etc., wore a holiday-dress, saluted each other kindly, etc. The pious Romans prayed to Janus every morning, whence

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his name of *Matutinus Pater* ('Father of the Morning'). He is represented with a sceptre in his right hand, and a key in his left, sitting on a beaming throne (probably relic of the original, or at least very old worship of Janus as the sun). He has also two faces (whence the expression applied to a deceitful person, 'Janus-faced'), one youthful, and the other aged, the one looking forward, and the other backward, in which some have professed to see a symbol of the wisdom of the god who beholds both the past and future, and others simply of the changing of the year. Numa dedicated to him the covered passage close by the Forum, on the road connecting the Quirinal with the Palatine. This passage (erroneously called a temple, but which was merely a sacred gateway, containing a statue of Janus) was open in times of war, and closed in times of peace. It is a striking commentary on the military habits of the Romans, that the place was shut only thrice in 700 years, first by Numa himself, again at the close of the first Punic war, and for the third time, under Augustus. It was closed also by Vespasian A.D. 71. JANUS-CLOTH, n. a fabric having each side dressed, and different colors on the respective sides. JANUS-FACED, double-faced; double-dealing; deceitful.

JANVIER, *zhong-vē-ā'*, LEVI, D.D.: 1816, Apr. 25—1864, Mar. 25; b. Pittsgrove, N.J.: missionary. He was educated at Lafayette and Princeton Colleges and Princeton Theol. Seminary, ordained a minister of the Presb. Church, and assigned to missionary work in India 1841. He settled in Lodonia, n. India, became superintendent of the mission, acquired the Urdu language, translated several religious books and tracts into it, and with Dr. Newton compiled a *Punjaubi Dictionary* (1854). His labors in India were only interrupted by a brief visit to the United States 1859-60. He received the degree D.D. from Lafayette College 1861. He was assassinated by a fanatic Sikh at Ananapoor, India.

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JAPAN, n. *jă-păn'*, or **JAPAN-WORK** [from the country in Asia so called] work varnished and figured in the manner practiced by the natives of Japan. **JAPAN'**, a varnish for articles made of metal or wood, generally made of linseed-oil, umber, and turpentine: V. to varnish as the natives of Japan do; to cover with varnish or japan. **JAPANING**, imp.: N. the art of giving a black or glossy surface to, and drawing figures on, as on wood. **JAPPANNED'**, pp. *-pān'd'*, made with a black and glossy varnish. **JAPANNER**, n. *-nēr*, one who varnishes.

JAPAN, *jă pan'* [corruption of Marco Polo's *Zipangu*; native name, *Dai Nippon* or *Dai Nihon* (fr. *dai*, great; *nī*, sun; *hon*, root or rising), Land of the Rising Sun]: very ancient island-empire of e. Asia, long remarkable for the proud isolating policy of its rulers, and now claiming special consideration, on account both of its recent renewed relations with the civilized world, and of the wonderful changes that during the last few years have been in progress in the country.

Japan Proper comprehends five large islands, viz., Honshiu (mainland), Shikokū, Kiushiu, Taiwan (Formosa), and Yezo, besides Hokoto (the Pescadores, ceded with Taiwan by China 1895), and other islands. The area of the five large islands and the Pescadores 1900 was 161,198 sq. m. The empire also includes nearly 4,000 small islands, among which are the Liu Kiu ('Loo Choo') and Kurile groups, and is bounded n. by the Sea of Okotsk, e. by the N. Pacific Ocean, s. by the eastern Sea of China, w. by the Sea of Japan.

Population.—Pop. (1899, Dec. 31) 47,018,765; males 22,073,896; females 21,689,257; nobles 4,551; gentry 2,105,698; common people 41,650,000. Pop. of Tokio, 1,440,121; Osaka 821,235; Kioto 353,139; Nagoya 244,145; Yokohama 193,762. There were 41 cities with pop. between 30,000 and 100,000; 6,807 foreigners were permanent residents in J.; Chinese 4,071, English 1,200, Americans 621, German 318, French 220, other nationalities 371. In the main seaport, Yokohama, there were 3,837 foreigners, of whom 2,359 were Chinese. The foreign mercantile firms comprised 103 English, 39 American, 42 German, 35 French and 255 Chinese.

Physical Features.—The islands of J. appear to be of volcanic origin, and that part of the Pacific on which they rest is still intensely affected by volcanic action. Earthquakes occur very frequently in J., although certain parts of the country are exempt. J. is one of the most mountainous countries in the world. Its plains and valleys with foliage surpassing in richness that of any other extra-tropical region, its Arcadian hill-slopes and forest-clad heights, its Alpine peaks towering in weird grandeur above deep ravines through which fierce torrents rush, lines of foam-fringed headlands, with a thousand other charms, give it a claim to be considered one of the fairest portions of the earth. The sublime cone of the sacred Fuji-san, erroneously known to foreigners as Fuji-yama ('Matchless Mountain'), an extinct or rather dormant volcano, rises from the

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sea 12,365 ft. Ontaké-san and Yari-ga-také (each 10,000 ft.), Taté-yama (9,500), Yatsu-ga-daké (9,000), Haku-san (8,590), Asama-yama (active volcano, 8,260), with many other scarcely lower peaks, rise in Honshiu. The three other large islands also abound in mountains, though of less elevation. Yezo has no fewer than eight active volcanos. Throughout the empire are many solfataras, and sulphurous springs well up from hundreds of volcanic valleys. The plains, most of the valleys, and many of the lower hills, are highly cultivated; nevertheless, the area of forest is said to be four times as great as that of the cultivated land. Lakes are not very numerous; but there are countless rivers, mostly too impetuous for navigation. The harbors are spacious and deep, but not numerous, considering the great length of the coast-line.

Climate.—The different parts of J. differ widely in climatic conditions. Leaving out the n. and s. extremes, at Tôkijô (Yedo) we find the annual average temperature to be $57^{\circ}7'$ Fahr.; in winter the mercury occasionally falls to $16^{\circ}2'$, and in summer it may rise to 96° : at Nagasaki, the lowest winter temperature is $23^{\circ}2'$: at Hakodaté, the annual extremes are 2° and 84° . The constantly hot weather begins only about the end of June, and terminates usually in the middle of September. Spring and autumn are exceedingly agreeable seasons. The ocean current known as the Kuroshiwo ('Black Stream') considerably modifies the climate of the s.e. coast; thus, while snow seldom lies more than 5 inches deep at Tôkijô, in the upper valleys of Kaga near the w. coast, less than 1° further n., 18 and 20 ft. of snow are common. The rainfall varies much in different years, but is considerably greater than on the neighboring continent. No month passes without rain; but it is most plentiful in summer, especially at the beginning and the close of the hot seasons, when inundations frequently occur. N. and w. winds prevail in winter, and s. and e. in summer. The violent revolving storms called typhoons are liable to occur in June, July, or September. Thunder-storms are neither common nor violent, and autumn fogs are equally rare.

Vegetable Productions.—In Hodgson's *Japan* is a systematic catalogue of Japanese flora by Sir William Hooker. A few of the most noteworthy trees and plants are the following: Chestnut, oak (both deciduous and evergreen), pine, beech, elm, cherry, dwarf-oak, elder, sycamore, maple, cypress, and many other trees of familiar name. The grandest forests of pine, and oaks of prodigious size, grow in Yezo; but the *Rhus vernicifera* or lacquer-tree, the *Laurus camphora* or camphor-tree, the *Broussonetia papyrifera* or paper-mulberry—the bark and young twigs of which are manufactured by the Japanese into paper—and the *Rhus succedanea* or vegetable waxtree of J., are among the remarkable and characteristic trees. Bamboos, palms, including sago-palms, and 150 species of evergreen trees, likewise flourish. Thus, the vegetation of the tropics is strangely intermingled with that of the temperate or frigid zone; the tree-fern, bamboo, banana, and palm grow side

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by side with the pine, the oak, and the beech, and coniferæ in great variety. The camellia, the Paulownia, and the chrysanthemum are conspicuous among indigenous plants. Nymphæas and Parnassia fill the lakes and morasses. The tobacco-plant, the tea-shrub, the potato, rice, wheat, barley, and maize are cultivated. The flora of J. bears a remarkable resemblance to that of N. America.

Agriculture is the chief occupation of the Japanese. They are very careful farmers, and their farms are models of order and neatness. They bestow great care upon manures, and thoroughly understand cropping and the rotation of crops. The soil is not naturally fertile, being mostly volcanic or derived from igneous rocks, but is made very productive by careful manuring. It grows tea, cotton, rice (the staple production), wheat, maize, buckwheat, millet, potatoes, turnips, beans, peas, etc. The rice harvest commences in October. Wheat is sown in drills in Nov. and Dec., and reaped in May and June. Flails and winnowing-machines, similar to those in w. Europe, are common. In 1894 the grain crop of rice, wheat, barley, and rye aggregated 306,091,130 bushels. The number of cattle (1900) was 1,261,214; horses, 1,541,979.

Animals.—Wild animals scarcely exist in Japan. A few wolves, foxes, and wild boars still roam in the n. of Honshiu. Wild deer are protected by law. The principal domestical animals are horses, of which there is an indigenous race; oxen and cows, used only as beasts of burden; and dogs, held in superstitious veneration by the people. Birds are very numerous, and include two kinds of pheasants, wild-fowl, herons, cranes, and many species common to Europe and Asia. There are few reptiles; and of insects, white ants, winged grasshoppers, and several beautiful varieties of moth are conspicuous.

Mineralogy.—The mineral resources of J. are being developed. In 1903 the official and private mines were worked by foreign methods and machinery. Gold, silver, copper, iron, lead, sulphur, coal, basalt, felspar, greenstones, granites red and gray, rock-crystal, agate, carnelian, amber, scorïæ and pumice-stone, talc, alum, etc., are found in greater or less quantities. Coal-beds extend from Nagasaki to Yezo. The supply of sulphur is almost inexhaustible, and of wonderful purity. But little revenue has yet been derived from the government mines, on account of the necessarily great outlay in the first instance for costly machinery, and the heavy expenses in sinking shafts and constructing furnaces, with other improvements.

Inhabitants.—Ethnologists have referred the Japanese to different types of mankind: Latham classifies them as Turanians; Pickering, as Malays; Prichard, as belonging to the same type as the Chinese; and in the narrative of the U. S. Expedition, they are ranked as a branch of the Tartar family. In Yezo there are about 12,000 Ainos, a hairy race wholly distinct from the Japanese, probably a remnant of the aborigines of Japan. The present Japanese are thought to be a mixed race, the issue of the intermarriage of victorious settlers from the Asiatic continent with Malays

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in the s. and Ainos in the n. Physically the Japanese is distinguished by an oval head and face, rounded frontal bones, a high forehead, narrow and often slightly oblique eyes—the irides of a brown-black color, the eyebrows heavy and arched. The complexion varies from a deep copper color to the fairness of western nations, but is more frequently of light-olive tint. The expression of the face is mild and animated. The Japanese ‘are a people of great qualities and exaggerated defects. They are honest, ingenious, courteous, clean, frugal, animated by a strong love of knowledge, endowed with a wonderful capacity of imitation, with deep self-respect, and with a sentiment of personal honor far beyond what any other race has ever reached.’ On the other hand, they are fickle, revengeful, suspicious, prone to self-conceit, and, especially in the lower classes, deeply tainted with licentiousness. The



1 2 3

The Japanese Ambassadors to Europe in 1862.
(From a photograph by Vernon Heath.)

1. Takenoûchi, Lord of Shimodzûké: 2. Matsudaira, Lord of Inami;
3. Kiyôgokû, Lord of Noto.

own costume of the Japanese gentleman consists of a loose silk robe extending from the neck to the ankles, but gathered in at the waist, round which is fastened a girdle of brocaded silk. Over this is worn a loose, wide-sleeved jacket or spencer, decorated with the wearer's armorial device. A cylindrical cap made of bamboo and silk, white stockings, and neat straw sandals, complete the attire. European costume has been assumed by the government as the official dress; and though the native costume still prevails among the people generally, such European articles as boots, hats, flannel shirts, etc. are coming more and more into favor as comfortable additions to it. A head entirely shaven is the

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distinctive mark of priests: in others, the hair used to be shaved off about three inches in front, combed up from the back and sides, and glued into a tuft at the top of the head; but the more natural European mode is now fashionable. The hair of the women is more abundant; otherwise their dress resembles that of the men. In the country, a short cotton gown is often the only clothing, and in summer the lower classes go almost in a state of nudity. The women paint and powder their skin, but consider it barbarous to wear such jewels as earrings..

Manners and Customs.—Many of the customs formerly characteristic of J. have, since the abolition of feudalism, 1868, become obsolete. Among these is *seppuku* or *hara-kiri* (i. e., 'belly-cut'), for long a legalized mode of suicide: see HARA-KIRI. Social barriers, lately almost insurmountable, have been broken down, and some of the highest posts are now held by men who have risen from the ranks. The social position of women is more favorable than in most pagan countries. Ladies of the upper class deem it proper to keep themselves in considerable seclusion; but this feeling is becoming somewhat modified. Girls attend the elementary schools as well as boys, and women's colleges have been established under the immediate patronage of Empress Haruku. Polygamy is not allowed, but concubinage is common. Marriages are arranged by the friends of both parties; among the upper classes, the custom of affiancing children prevails. Formerly, when a maiden married, her teeth were blackened and her eyebrows shaven off; this custom is discountenanced by the empress, and is gradually being discarded. Prostitution is very prevalent. It is not uncommon for a dutiful daughter to sell herself for a term of years to the proprietor of a house of ill-fame, in order to retrieve her father's fallen fortunes. When she returns, no stigma attaches to her; rather is she honored for her filial devotion. Licensed houses of ill-fame are now confined to certain districts. Hot baths are a great institution in Japan. Formerly persons of both sexes bathed together; and this primitive custom (in which the simple-minded Japanese sees no impropriety) still prevails in rural districts, though forbidden in the cities. Until lately, the only vehicles in J. were two kinds of palanquin, viz., the *kago*, and the *norimon*; but in all the more level districts, these have now been superseded by the *jin-riki-sha* ('man-power-carriage'), a sort of two-wheeled perambulator drawn by one or two men. Horse-carriages are novel to J., and as yet are rarely seen except in and near the treaty ports. In most of the more mountainous regions, the roads are impracticable even for *jin-riki-sha*, and the only means of conveyance are *kago* and pack-horses. The Japanese are essentially a pleasure-loving people. The theatre forms one of their chief attractions. They take great delight in visiting public gardens, and admiring the blossoms of spring or the brilliant tints of autumn. Professional musicians and dancers, principally young women remarkable for personal attractions, are in constant request for parties. The floors of Japanese houses are laid with thick, soft, closely-fitting mats, on which the

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inmates squat, eat, and sleep; these are kept scrupulously clean, the shoes or clogs always being removed on entering. The time of greatest festivity is the New Year, now held contemporaneously with our own. Wrestling, jugglery, and archery are favorite sports; and in the game of *go*, somewhat like our chess, they attain great skill. Great regard is paid to the dead, the ancestral tablet being always placed in the family shrine with the household god. Fish and rice are the staple food of the people, and tea and *saké* (rice-beer) their beverages.

Language.—In J. there are two systems of writing: (1) The ideographic system of Chinese hieroglyphic symbols, which dates from the 3d c.; and (2) the phonetic syllabarium, a modification of this, consisting of 47 characters, and a few supplementary monosyllabic sounds. Prior to either of these, some antique form of writing, now consigned to oblivion, is supposed to have existed.

The phonetic alphabet, invented about A.D. 810, is known as the *Hiragana* form of character. In process of time, this system was rendered more complex by the addition of variations, and this led, apparently, to the introduction of another and simpler alphabet, entirely without variants, and known as the *Katakana* character. Both these phonetic systems are written in perpendicular columns. It is not a little remarkable that the Chinese ideographic symbols retain their ascendancy over the phonetic alphabets, and are adopted almost exclusively for diplomatic documents and the higher class of books.

There is no similarity whatever between the *spoken* languages of China and J.; the latter—one of the softest tongues out of Italy—is not monosyllabic, but agglutinate.

The *literature* of J. is abundant and various, and includes works on history and science, encyclopedias, poetry, prose fiction, and translations of European works. Besides original writings, the Japanese have adopted the whole circle of Chinese Confucian literature; the Chinese classics indeed form the basis of their literature, system of ethics, and type of thought. The present assimilation of western ideas is leading to a proportionate neglect of Chinese philosophy; but as yet there is little or no tendency to discard the cumbrous system of orthography imported from China.

Religions of Japan.—There are two prevailing religions in J.—*Shintô* or *Kami no Michi* ('The way of the gods'), the indigenous faith; and Buddhism, introduced from China A.D. 552—1. *Shintôism*. The characteristics of Shintôism in its pure form are 'the absence of an ethical and doctrinal code, of idol-worship, of priestcraft, and of any teachings concerning a future state; and the deification of heroes, emperors, and great men, together with the worship of certain forces and objects in nature.' The principal divinity is the sun-goddess Amaterasu, from whom the mikado is held to be descended. After the Restoration (1868) the govt. attempted to free Shintôism from the Buddhist innovations which had contaminated it, and to revive it in its pure form as the national religion, but the

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effort was unsuccessful. The only public recognition now given it are the services in the imperial palace, and the annual payment by the govt. of about \$300,000 to certain officers and to keep the tombs of the mikado's ancestors and the memorial shrines of patriots in repair. Shintô temples are singularly destitute of ecclesiastical paraphernalia. A metal mirror generally stands on the altar, but even this is a Buddhist innovation. The spirit of the enshrined deity is supposed to be in a case, which is exposed to view only on the day of the deity's annual festival. The worship consists merely in washing the face in a font, striking a bell, throwing a few cash into the money-box, and praying silently for a few seconds; nevertheless, long pilgrimages to famous shrines and to the summits of sacred mountains are often taken to accomplish this. Shintôism is rather an engine of government than a religion; it keeps its hold on the masses chiefly through its being interwoven with reverence for ancestors.—2. *Buddhism*. Of this there were (1888) 11 sects, with 29 subdivisions, having 71,234 temples and shrines, and 73,759 priests. The monks have assumed the functions of priests, and Japanese Buddhist worship presents striking resemblances to that of the Roman Church. The history of the Buddhist monasteries, too, often reads remarkably like that of the corresponding institutions in mediæval Europe. Notwithstanding the increased patronage recently bestowed on Shintôism by the government, Buddhism is still the dominant religion among the people. The most popular, as well as the wealthiest and most enlightened, of the Buddhist denominations, is the *Monto* or *Shinshiu* sect, which recognizes one God in Amida Buddha (only, however, an abstract principle personified, not the Living God of Christianity), discountenances asceticism and clerical celibacy, and cultivates preaching, the favorite topic being the duty of self-reliance. It would be a mistake, however, to suppose that a clear line can be drawn between adherents of Buddhism and Shintôism respectively; in the popular mind the two faiths are so blended that the temples of both are frequented without much discrimination. The better educated classes are mostly agnostics, striving more or less to regulate their lives by the maxims of Confucius. Many Japanese temples are magnificent specimens of architecture in wood; they are remarkable for their vast tent-like roofs and their exquisite wood-carving. In the operation of establishing an entirely new form of govt. after the revolution of 1868, a vast number of Buddhist temples were confiscated for public uses, chiefly educational, and the Mikado promised to aim at complete religious toleration. How well he kept his word is attested by the fact that it was decreed 1884, July 11, that thenceforth there should be no official priesthood, and that all religions, Shintôism, Buddhism, and Christianity, should be protected equally, and have a common standing before the law. Under this decree, christianizing influences were more openly and vigorously promoted; and 1888 there were reported 443 Prot. Christian foreign missionaries, 288 church organiza-

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tions, 142 native pastors, 257 unordained native preachers and helpers, 25,514 church members; Rom. Cath. adherents 10,026 (taught by French missionaries); and Greek Catholics 15,542 (taught by Russian missionaries). Nearly all the Prot. missionaries were American and English. There were also reported the building of numerous additional churches, beside orphan asylums, convents, and theol. seminaries, the establishment of Sunday schools, Young Men's Christian Associations, and religious newspapers; and the first consecration in J. of a Rom. Cath. bp., in Yokohama, June 19. There were then in all the empire 191,968 saints' shrines and temples, with 14,849 priests, and 72,039 Buddhist temples, with 56,266 priests.

Government.—The absolutism of the sovereign has been a primary feature of the govt. of J. from time immemorial, though public affairs were administered through a supreme council, consisting of the premier, vice-premier, and heads of the great depts. of state, and subordinate to it through a legislative council under the presidency of an imperial prince, and an assembly of provincial governors. Since the middle ages, the sovereign, when seen by his subjects, sat with folded arms in his palace, his feet never touching the ground, none but a few of the most august nobles being permitted to approach him, and the whole people regarding him as an unusually sacred personage. But since 1868 the govt. has been that of the system that prevailed from the 7th to the 12th c., modified by the adoption of features from the United States and European govts., the drift of affairs has been toward a constitutional monarchy, the old feudal system has been abolished, and the mikado takes an active part in public concerns, and is as approachable as the pres. of the United States. The basis of the reformed govt. is the J. Magna Charta, the 5 declarations made and sworn to by the present mikado, 1868: ' (1) We will invite discussion far and wide, and decide all measures according to popular wishes; (2) We will unite the upper and the lower (all classes of people), and ameliorate the nation energetically; (3) We will unite the fountains of honor (the court) and of power (the tycoonate) in one hand, and endeavor to satisfy the wishes of every citizen; (4) We will wipe out the abuses of former times, and conduct all measures according to the rules of heaven and earth; (5) We will seek wisdom and intelligence all over the world, and strengthen the foundation of the empire ' For administrative purposes the empire was divided into 3 *fu* or imperial cities, 44 *ken* or prefectures, and 350 *hans*, and there were established to assist the mikado a privy council of 13 members, a cabinet with 8 executive officers, a senate consisting of 60 members (1875), a supreme court of justice with 24 superior judges, and local or prefectural assemblies (1878). 1881, Oct. 12, the mikado further promised to establish a national parliament with limitation of the imperial prerogative; and in order to prepare the material for a house of nobles, issued a rescript 1884, June 6, creating 5 orders of nobility, princes, marquises, counts, viscounts, and barons, the individual selections to be made

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(1) according to the age and standing of the family, and (2) according to the individual's service to the country. The last step in this remarkable transformation of govt. initiated by the sovereign was taken 1889, Feb. 11, when the mikado sanctioned the establishment of a constitutional form of govt. to go into effect 1890, April. 1.

The executive depts. are foreign affairs, imperial household, interior, finance, war, navy, justice, education, agriculture and commerce, and communications. The administration of justice is intrusted to (1) one *Tai-shin-in*, which combines the powers of the U. S. Supreme Court and the French Court of Cassation, and is presided over by one chief justice and an indefinite number of associate justices, (2) four *Jo-to-sai-ban-sho* (courts of appeal), in Tokio, Osaka, Nagasaki, and Fukushima, whose judges visit every province in their respective jurisdictions twice a year, and sitting in the court of *oyer and terminer* with a judge of the provincial court, try capital cases, subject to approval of sentence by the *Tai-shin-in*; (3) *Fu-ken-sai-ban-sho* (provincial courts), in the capital cities of the 30 provinces into which the empire is divided, having jurisdiction over civil and criminal cases, subject to approval of life-sentences by a court of appeal. The dept. of communications comprises the bureaus in charge of light-houses, telegraphs, nautical schools, govt. subsidies to steamship companies, and the foreign and domestic postal service. The scope of the other depts. is indicated by their respective titles.

Finances.—The public debt of J. 1894 was \$316,307,284. The budget estimates for the year 1896 showed a total revenue of \$90,194,658, of which \$38,353,928 were derived from the land tax; \$18,711,281 from the tax on saké; \$7,718,353 from the postal and telegraphic systems; \$5,372,641 from customs; \$3,229,919 from miscellaneous inland revenues; \$3,011,924 from state services; \$2,904,423 from the tobacco tax; \$2,434,330 from various licenses and fees. The estimated expenditure was \$89,275,874, of which \$17,304,492 were for interest and fees on the public debt, \$6,040,083 for reduction of public debt, \$13,251,722 for the ministry of war, \$10,086,184 for defenses, \$5,979,931 for the ministry of finance, \$5,619,562 for the ministry of marine, \$7,706,749 for the ministry of posts and telegraphs, etc.; revenue 1900, \$106,998,000; national debt \$201,110,000.

Army and Navy.—The army has been equipped and disciplined chiefly by a commission of French officers. The peace establishment consists (1893) of 3,615 officers, 65,098 men, 2,181 students, and 10,872 horses; the war establishment comprises 200,729 officers and men, including the *landwehr*, which comprises 106,053 officers and men. The military schools had 2,181 students. The modern and remarkable navy of J. dates its origin from the purchase from the U. S. govt. of the old Confederate cruiser *Stonewall Jackson*, and the offer of the U. S. govt. to J. of the privilege of sending 5 Japanese students to the U. S. Naval Acad. annually. A large number of boys, mostly of noble

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families, were thus educated side by side with American cadets, and on the completion of their 4 years' course were immediately recalled by their govt., and on filing their certificates of graduation at Annapolis were commissioned lieutenants in the imperial navy, and at once started on active careers. In 1893 the J. navy consisted of 4 first-class battle-ships, 8 armored cruisers, 7 protected cruisers, 13 other cruisers, in addition to 15 gunboats, 60 torpedo-boats, and some miscellaneous craft; it was manned by 14,852 officers and men. Of vessels on the stocks there were 2 battle-ships, 2 second-class cruisers, 3 despatch-boats, and 17 torpedo-boats. The *personnel* is trained as in the navies of Europe, and has given excellent proofs of bravery, steadiness, and discipline when under fire, as was demonstrated during the war with China. The total number of the naval reserve is 2,400. In 1888 the govt. appropriated \$2,204,742 for the construction of forts at Tsushima, Shimonoséki, and in Tokio Bay, and the manufacture of heavy guns, torpedoes, and other articles of coast defense. J. now builds her own protected cruisers and is planning battleships.

Education.—The modern system of education was established by imperial decree 1872, and the Rev. Prof. Birdsey Grant Northrop, supt. of education in Conn., was appointed the first superintendent. The whole empire, excepting the island of Yezo, which has a distinct colonial govt., was divided into 8 grand school districts. The cities of Tokio and Osaka, and the 6 provincial capitals, Aichi, Ishikawa, Hiroshima, Nagasaki, Niigata, and Awomori, were designated as the seats for the establishment of universities and other important educational institutions. Each grand school district was divided into 32 middle-school districts, each with a school, and each of these districts was further divided into elementary school districts, each with a school. That educational advantages might not thereafter be confined to the most favored classes as in the past, it was decreed that all children between the ages of 6 and 14 years should be compelled to attend school from 3 to 6 hours per day for at least 32 weeks in each year, and the establishment of 53,760 schools for them was ordered. In 1893 there were 23,960 elementary schools in the empire, with 61,556 instructors and 3,337,560 pupils in attendance. At the head of the educational institutions is the Imperial Univ. of Tokio, comprising a preparatory dept., and special schools of law and jurisprudence, chemical technology, literature, and physics. It had (1893) a teaching staff of 213 professors and instructors, 1,395 students, an extensive library, and a large museum well supplied with apparatus and scientific collections. The Tokio School of Medicine, with 10 foreign and 19 native professors, formed a co-ordinate branch of the university. The Tokio School of Foreign Languages gave instruction in English, French, German, Russian, and Chinese, and the English schools in Tokio, Niigata, Aichi, Osaka, Hiroshima, Nagasaki, and Miyangi had a large attendance. The Tokio school for girls had a curriculum modelled after that

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of the Girls' High School in Boston, with 10 teachers (2 American ladies) and 127 students. Besides these there were 96 private schools of the English language, 4 of French, and 2 of German; the Imperial College of Engineering, connected with the dept. of public works; a law school of the dept. of justice; and 6 private schools where different branches of law, science, and art were taught. The Tokio Normal School had 10 instructors and 430 students, and there was a total of 583 normal teachers and 7,589 students in the empire. More recently a school of telegraphy was established at Tokio and a nautical school for the merchant marine at Osaka. In 1888 a meteorological bureau was opened within the walls of the old castle in the centre of Tokio, with apparatus imported from the United States and Europe, and with 47 stations from which vessels may be warned of approaching typhoons. A standard meridian was officially declared 1888, Jan. 1, and a national system of standard time went into general operation during that year. Public libraries are being established in all the large cities, and graduates of the Univ. of Tokio trained to the western methods of library work. There were 550 news-



A Junk in the Bay of Yeddo, from a native drawing.—Oliphant's *Japan*.

papers in J. (1888), of which 203 were in Tokio, and 43 in Osaka; many of which were devoted specially to the arts and sciences. Beside the government schools, there are schools and colleges established by Christian missionaries of various denominations, which are conducted with remarkable efficiency, giving education of a high grade and greatly esteemed by the natives.

In the *mechanical arts*, the Japanese have long had great excellence, especially in metallurgy, and in the manufacture of porcelain, lacquer ware, and silk fabrics; indeed, in some of these departments works of art are produced, so exquisite in design and execution as to more than rival the best products of Europe. The Japanese have long understood lithochrome-printing. The drawings of animals and figures generally are wonderfully graphic, free, and true to

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nature; but in landscapes they fail, from erroneous perspective; and of the art of painting in oils they were, until lately, entirely ignorant.

Commerce.—In 1901 J. had 3,915 m. of railroad in operation, of which 1,010 m. were govt. property; 29,898 m. of telegraph wire (1902); average annual postal and telegraph receipts about \$6,487,688. Imports were valued at \$141,117. Commercial intercourse with China, suspended during the war, has assumed large proportions. Trade with British India 1901 amounted to \$26,000,000; Great Britain \$31,000,000; Germany \$16,785,586. Of the exports 1902 the United States took \$40,597,582. The ocean commerce was carried in 3,093 foreign vessels of 4,347,211 tons and 1,707 Japanese vessels of 579,967 tons. The United States consumes annually a large part of the tea and more than one-third the silk production of J. The foreign debt 1902 was \$260,000,000. The gold standard was adopted 1897, October.

History.—To understand something of the government and institutions of J., past and present, it is necessary to glance at its history and political landmarks. Here we find an emperor whose dynasty began to reign more than 2,500 years ago, or B.C. 660. Its founder, Jimmu Tennô, was contemporary with Nebuchadnezzar; and in 1868, after twenty-five centuries, it threw off the oppression and decrepitude of the last 676 years, and in the person of Mut-sûhito, the present mikado or emperor (the 122d of his race), entered on a new and promising career. The principal landmarks of Japanese political history are briefly as follows: A time of anarchy and faction on the one side, and a succession of feeble sovereigns on the other, enabled Yoritomo, the shôgun or generalissimo (from *Ta-tsiang-kiun*, the Chinese term for 'the great chief or commander of the army')—or tycoon (Chinese *Tai Kun*, i.e., 'Great Lord'), as he is called in recent treaties—to usurp the supreme authority. This occurred 1192; but the creation of a shôgun by the mikado dates from B.C. 85. This high officer was subsequently known to Europeans as the temporal emperor, and to the mikado they assigned purely spiritual functions; but the Japanese themselves recognized one sovereign only, viz., the mikado, who held his court at Kiyôto, or Miyako, while his rival in Yedo acted as real sovereign, at the safe distance of 300 m.; and the Shôgunate became henceforward a permanent institution. It might be said that the shôgun governed, but did not reign; while the mikado reigned but did not govern; though three times a year he received the homage of his all-powerful subject. He even continued nominally the sole temporal emperor, though pensioned by the shôgun and deprived of all real authority. In 1603 the shôgun Tokugawa Iyéyasû (the 'illustrious') organized a government which secured to the empire a peace of 200 years. He founded likewise a permanent succession, and his descendants reigned at Yeddo till 1868. His system was perfected by Iyémitsû, third shôgun of the Tokugawa dynasty. It was his policy 'to preserve unchanged the condition of the native intelligence.'

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'to prevent the introduction of new ideas,' and to effect this he not only banished foreigners, interdicted all intercourse with them, and extirpated Christianity, which had been introduced by the Rom. Cath. missionaries, but introduced that 'most rigid and cunningly devised system of espionage' that was in full activity at the time of the Earl of Elgin's mission, as amusingly described by Mr. Oliphant. 'This espionage,' says a recent Japanese writer, 'held every one in the community in dread and suspicion; not only the most powerful daimio felt its insidious influence, but the meanest retainer was subject to its sway; and the ignoble quality of deception, developing rapidly to a large extent, became at this time a national characteristic. The daimios, who at first enjoyed an honorable position as guests at the court of Yedo, were reduced to vassalage, and their families retained as hostages for the rendition of a biennial ceremonial of homages to the shiogun. Restrictions surrounded personages of this rank until, without special permission, they were not allowed to meet each other alone.' In 1549 St. Francis Xavier introduced the Rom. Cath. religion into J. and the Portuguese (who first landed in J. 1543) carried on lucrative trade; but by-and-by the ruling powers took alarm, ordered away all foreigners, and interdicted Christianity (1624), believing that foreigners impoverished the country, while their religion struck at the root of the political and religious systems of Japan. The converts to that form of Christianity introduced by Xavier, were found to have pledged their allegiance to a foreign power; while their conduct is said to have been offensive toward the Shintô and Buddhist temples; so that in time they came to be regarded as a dangerous and anti-national class whose extirpation was essential to the well-being of the nation, and to the success of the political system then being organized or perfected by Iyémitsû. The Portuguese continued to frequent J. till 1638; when they and their religion were finally expelled. Christianity was suppressed with every cruelty, and at the cost of 50,000 lives; its confessors were murdered, and the ports closed to foreign traffic. From this date the Japanese government maintained the most rigid policy of isolation. No foreign vessels might touch at Japanese ports under any pretense. Japanese sailors wrecked on any foreign shore were with difficulty permitted to return home; while the Dutch, locked up in their factory at Deshima, might hold no communication with the mainland; and the nation lived like frogs in a well, till 1853, when they were rudely awakened from their dream of peace and security by Commodore Perry steaming into the harbor of Yokohama, with a squadron of United States' war-vessels. With a combination of dignity, resoluteness, argument, and promise, he extorted a treaty from the frightened shôgun (1854, Mar. 31), and J., after a withdrawal of 216 years, entered once more the family of nations. Other countries slowly followed the example of the United States; Russia and the Netherlands 1855; the treaty with Great Britain was negotiated 1858; that with France 1859; with Portugal

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1860; with Prussia and the Zollverein 1861; with Switzerland 1864; with Italy 1866; with Denmark 1867. By these the seven ports of Nagasaki, Kanagawa (for this Yokohama has been substituted), Hiyogo (or Kôbe), Yedo (now called Tokiyo), Osaka, Hakodaté, and Niigata were opened to foreign commerce.

It will thus be seen that 'the history of the empire of the Rising Sun is divisible into four distinct periods: the first, which ends with the landing of the Portuguese 1543, is purely local; the second, 1543-1638, includes the story of St. Francis Xavier, the trade with Portugal, the persecutions, and the final expulsion of Europeans; the third, 1638-1854, is distinguished by the Dutch monopoly, and the resolute exclusion of all foreigners; in the fourth, since 1854, J. has once more become accessible to everybody.

The J. of 1854 was a reproduction of Europe of the 12th c.—the feudalism of England under the Plantagenets. An aristocratic caste of a few hundred nobles—the *Daimi-yôs* or territorial princes of J. (278 in number)—ruled large provinces with despotic and almost independent authority; their annual incomes reaching in one or two instances to \$4,000,000. By signing the Perry treaty at all, the shôgun gave deep offense to the daimiyôs, and by signing it without the sanction of the mikado, he committed an act of treason which brought in all the confusion, violence, and disaster of the next few years, and led ultimately in 1868 to the complete overthrow of his own power and the restoration of the mikado to his rightful position as actual ruler of the empire. For long, not a few of the most powerful daimiyôs had been dissatisfied with the shôgun's position, and these gladly availed themselves of the pretext now furnished for opposing him. All possible means were taken to bring him into complications with the ambassadors at his court; and to this motive, rather than to any hatred of foreigners, are to be ascribed the numerous assassinations which darkened the period immediately prior to 1868. Every weakening of his power was a step gained toward his overthrow and the longed-for unification of the empire in the hands of the mikado. At length the shôgun resigned; but it was only after a sharp civil war in the winter of 1867-8 that his power was completely crushed. At the outset of the struggle, the imperial party were decidedly retrogressive in their political ideas; but before its close various circumstances convinced them that without intercourse with foreign nations the greatness which they desired for their country could not be achieved; and when they secured power, they astonished the world by the thoroughness with which they broke loose from the old traditions and entered on a course of enlightened reformation. Recognizing Yedo as really the centre of the nation's life, they resolved to make it the capital; but the name Yedo being distasteful through its associations with the Shôgunate, they renamed the city Tôkîyô, or Tôkei—i.e., Eastern Capital. Here the mikado established his court, abandoning for ever that life of

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seclusion which had surrounded his ancestors with a halo of semi-divinity, but had deprived them of all real power. The venerable city of Kiyôto was at the same time renamed Saikiyô or Saikei—i.e. Western Capital. The daimiyôs resigned their fiefs to the mikado. This has been represented as a grand act of self-sacrifice on their part; but the truth is that the vast majority of them had come to be mere *fainéants*, leaving the government of their territories to the more energetic of their retainers; and it was by the action of a number of the retainers that this, in common with the other changes connected with the Restoration, was affected.

Since 1868, Japan has given several remarkable manifestations of self-consciousness. Her attitude toward Corea; her annexation 1879 of the Liu Kiu Islands, notwithstanding China's remonstrances and threats; her continual protest against the unpalatable extra-territoriality clauses in the treaties, which declare American and European residents amenable to their own, and not to the Japanese, courts of law—prove that she is far from having lost that bold independence of spirit which has always characterized her.—Various parts of J. were visited by destructive floods 1889, Aug. 20 and Sep. 11. The calamities caused by floods in 1889 were officially reported as follows: 12 prefectures devastated, 2,419 people killed, 155 wounded, more than 90,000 deprived of means of subsistence, 50,000 houses swept away or submerged, 150,000 acres of standing crops destroyed, and 6,000 bridges washed away.

In 1891, Oct., J. suffered from a severe earthquake which extended nearly 400 miles. The city of Nagoya, on Hondo Island, was almost entirely destroyed, nearly 50,000 houses being razed to the ground and more than 5,000 persons being among the killed and wounded. In Gifu more than 2,000 persons were killed and one-half of the city was destroyed. At Ogaki, a town of 20,000 inhabitants, 2,000 were killed or wounded. Great damage was done to the shipping, railroads, and telegraph.

In 1894 (Aug. 3) the Japanese, owing to their attitude on the Korean question, became embroiled in a war with China. The former Korean minister to J., Kirn-ok-Kiwn, who in 1884 had attempted to establish a dictatorship over the peninsula, was assassinated at Shanghai (Mar.). Incensed at the murder of its protégé, J. ordered her troops to Corea, but as soon as they landed the Japanese govt. was notified by China and Russia that they must be withdrawn. J. refused to evacuate, and war broke out. It was soon seen that the resources of China in charge of her lethargic commanders were of no avail against the energy and modern training of the Japanese. On both land and sea the forces of the mikado were victorious. After the battle of Ping Yang (1894, Sep. 15, 16) J. was master of Corea, and on Sep. 17 she destroyed almost the entire Chinese navy at the Yalu river. Following up her advantages, J. crossed the Yalu (Oct. 24) and invaded Chinese territory. Her troops met a Chinese force which they drove back and pursued

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to Kiulien-chao. They occupied this point without fighting.

Later this month the second Japanese army under Marshal Oyama landed at Talien-Wan Bay and with the navy jointly attacked Port Arthur (Nov. 21). Fortress after fortress was captured, the infantry carrying them by storm and chasing the Chinese headlong out of their works. The fall of Port Arthur was followed by a victory at Kai-Phing in Manchuria.

At Wei-Hai-Wei (1895, Feb. 12) the remnants of the Chinese navy were captured or destroyed. Defeat after defeat followed the retreating Chinese forces until the road to Peking was almost open to their foes; then, fearing further disasters, they sued for peace and appointed Li Hung-Chang plenipotentiary. He arrived at Simonoseki, Japan, Mar. 19. In the preliminary negotiations China asked for an armistice, which J. was ready to grant if the Chinese would give up the approaches to Peking. This was refused, but in the meantime (Mar. 24) a Japanese fanatic fired at Li Hung-Chang and wounded him in the cheek. Immediately the mikado ordered a three weeks' unconditional armistice, and the culprit was sentenced to penal servitude for life.

In 1895 (April 17) the war was ended by the formal signing of a treaty of peace, the chief provisions of which were that China recognized the independence of Corea; that she conceded to J. permanent sovereignty over the Leao-Tong peninsula (this provision was somewhat modified at the request of Russia); that she engaged to pay two hundred million Kai-Phing taels (about \$142,000,000 in gold) indemnity; and that she ceded the island of Formosa to Japan.

See Kämpfer, *History of Japan* (1727); works by Alcock (1863), L. Oliphant (1850), Mossman (1873), Adams (1874), Arinori Mori (New York 1873), Griffis (New York 1876); the French works of Humbert and Bousquet; Mitford's *Tales of Old Japan*; *Transactions of the Asiatic Society of Japan*; Sir E. J. Reed, *Japan* (1880); Miss Bird (Mrs. Bishop), *Unbeaten Tracks in Japan* (1880); W. G. Dixon, *Land of the Morning* (1882); *Genji Monogatari* (the most famous Japanese romance, Eng. transl. 1882). See also grammars of the written and spoken languages by Hoffmann and by Aston, and the dictionaries by Hepburn, and by Satow and Ishibashi.

JAPANESE, n. *jăp'ăn-ēz*: a native of Japan, or the language. JAPAN CURRENT, that branch of the equatorial current of the Pacific which trends northward along the Japan coasts. JAPAN EARTH: see under TERRA.

JAPAN'NING: art of giving a coating of varnish and other materials to certain manufactures, by which a resemblance is produced to the beautiful lacquered wares of Japan and China. The term is more generally applied in this country to metal-works upon which a dark-colored varnish is applied with heat, but the process is quite as extensively applied to papier-mâché works: See LACQUERING.

JAPE—JAPYGIA.

The japanned works of our manufactures are chiefly iron and tin, such as coal-boxes, tin canisters and other articles, which are thereby made more ornamental, and are at the same time protected from rust.

The japanning material consists of anime or copal varnish, alone, or mixed with ivory-black, to produce a black japan; or with asphalt, to produce a dark or light brown, according to the quantity used. For very cheap tinned wares, a single coating is all that is usually given. After being varnished, they are put into a heated oven for a time, after which they are ready for use; but in the case of more valuable articles, such as the handsome coal-boxes of iron now extensively manufactured, and still further ornamented by gilding and painting, several coats of black japan varnish are applied, each being dried in the oven previous to the application of the next, so that a coating of sufficient substance to bear polishing is obtained. Rottenstone and Tripoli powder are used by the polisher, and a beautiful surface is obtained, equal to that of polished jet. The polishing powders are at first applied with leather; but the finishing is done by women, who use only the palms of their hands with small quantities of Tripoli.

The beautiful black surface thus produced is admirably adapted for decoration by gilding, in which much taste is now shown especially by British manufacturers. For the Japanese process, thus imitated on metal, under the name of japanning, see LACQUERING.

JAPE, *v.* *jāp* [AS. *geap*, to deceive: F. *japper*, to yelp—*familiarly*, to chatter]: in *OE.* and *familiar speech*, to mock; to deceive; to lie; to impose on. JA'PING, *imp.* JAPED, *pp.* *jāpt*.

JAPHETH, *jā'fēth*, or JAPHET, *jā'fēt* [Heb. *Yepheth*, apparently derived in Genesis from *pathah*, 'to open,' trop. perhaps 'to stretch forth,' hence supposed to mean 'widely dispersed.' Gesenius and other scholars, however, suggest a derivation from *yaphah*, 'to be fair' or 'beautiful,' in allusion to the fair complexions of the Japhetic or European races]: according to the Hebrew record, second (or as some interpreters say, third) son of Noah, whose descendants peopled first the n. and w. of Asia, after which they proceeded to occupy 'the isles of the Gentiles,' i.e., all the region about the Levant and the Ægean Sea. J. has at a later period, in Talmud and Midrash—not merely from its similarity to the Greek name Iapetus or Japetus, legendary founder of the human race—been used as a typical expression for 'Greek.' Cf. *Meg.* 71, *b.*; *Ber. R.* 40, *b.* etc.

JAPHETIAN, *a.* *jā-fēt'ī-ăn*, or JAPHETIC, *a.* *jā-fēt'ik*: pertaining to the languages of the descendants of *Japheth*, the eldest son of Noah.

JAPURA, *chá-pó'rá*, or CAQUETA, *ká-kā'tá*: river of S. America, tributary of the Amazon. It rises in the Granadian Andes, lat. 1° 26' n., long. 76° 50' w., and joins the Amazon about 65° 50' e. long. Its entire length is more than 1,000 m.; the navigation is impeded by cataracts.

JAPY'GIA, or IAPY'GIA: see APULIA.

JAR—JARGON.

JAR, n. *jâr* [OF. *jare*; F. *jarre*—from Sp. *jarra*; It. *giara*, a jar—from Ar. *garrah*, a waterpot]: an earthenware pot or vessel of variable shape and dimensions.

JAR, n. *jâr* [Swab. *garren*; Bav. *garrezen*, to creak like a wheel or shoe: Sp. *chirriar*, to creak. L. *garrirë*, to chirp, to chatter: comp. Gael. *dear* = *jâr*, a refusal]: a harsh rattling vibration of sound; harsh vibration or sensation; a quarrel; a clash of interests or opinions: V. to strike or shake with a kind of short rattle; to sound untunably; to strike or sound harshly or discordantly; to clash; to interfere; to quarrel or dispute. JAR'RING, imp.: ADJ. conflicting; disputing: N. a quarrel; a dispute. JARRED, pp. *jârd*. JAR'RINGLY, ad. *-lî*. AJAR, ad. *â-jâr'*, or ON THE JAR, applied to the state of a door slightly open, when it is capable of producing the jarring sound; open but a little, said of a door.

JAR'CHI: see RASHI.

JARDES, n. *jârdz* [F. *jardons*]: in *far.*, hard callous tumors in horses, a little below the bending of the ham on the outside.

JARDINIÈRE, n. *zhâr-dîn'î-âr* [F. a gardener's wife]: an ornamental stand for plants and flowers, to be used as a piece of decorative furniture in a room.

JARGON, n. *jâr'gôn*, or JARGOON', n. *-gôn'*: a mineral, being a Cingalese variety of zircon, colorless specimens of which are often sold for diamonds.

JARGON, n. *jâr'gôn* [F. *jargon*, gibberish: It. *gergone*; F. *jargonner*, to talk gibberish]: confused, unintelligible talk; gabble; a disparaging term applied to rude and harsh language; applied to the peculiar phraseology of a party, etc. *Note.*—JARGON may be connected with Gael. *iarr*, to beg, *cainnt*, speech—thus denoting the canting, droning language of beggars. See Dr. Charles Mackay. JARGON-IZING, *jâr-gôn-îz'ing*, phenomena observed chiefly in acute mania; it consists in the utterance of uncouth and unintelligible sounds, which may resemble articulate words, or be little more than harsh ejaculations and bellowings. This symptom must not be confounded with those imitations of foreign tongues or provincial idioms, or the perversions of the faculty of language characteristic of mania and other forms of alienation, as the sounds in Jargonizing are not intended to be, nor to appear, the vehicles of thought or manifestations of feeling. They stand in the same relation to the excitement and violence, as the rapid motion, the furious gesticulation, and the tendency to injure and destroy everything that is seemly and harmonious. The tone in which they are uttered is generally harsh and defiant, because intense passion thrills through every muscle, through those of the vocal apparatus as well as of the arm raised to strike. Jargonizing is, in all probability, involuntary. It occurs at the commencement or crisis of mania, when the power to control the ideas and to regulate motion is most impaired. It may, however, be the

JARGONELLE—JAROSLAV.

result of volition, so far as that the individual desires and determines to speak, but fails from the rapidity or intensity of his emotions to call into action, and co-ordinate the organs engaged in articulation. Such utterances may be heard in soliloquy, if the phrase may be used, and during sleep. The feature has been accepted as pathognomic of mania. It has, however, been noticed in the delirium of certain stages of fever and of drunkenness, which are mental stages depending upon blood-poisons. During periods of profound abstraction, similar sounds are said to have proceeded from the lips of sane and healthy men. In all these instances the natural operation of the will appears to be enfeebled or suspended.

JARGONELLE, n. *jâr'gõn-ěl* [F. *jargonnette*—from *jargon*, a yellow diamond, a small stone]: a rich variety of pear very stony.

JARNAC, *zhâr-nâk'*, BATTLE OF: at the town of Jarnac, dept. of Charente, France, 1569, Mar. 13, between 20,000 Rom. Catholics under the Duke of Anjou, afterward Henri III., and 15,000 Huguenots under Louis, Prince of Condé, together with Coligny. The latter were completely routed. See CONDÉ.

JAROSLAV, *yâ'rõ-slâv*: capital of the govt. of J., in European Russia; large and fine town, on the right banks of the Volga, and its affluent the Kotorosl; lat. 57° 37' n., long. 39° 53' e.; 164 m. from Moscow. It is one of the most ancient Russian towns, and is said to have been founded by Jaroslaw the Great, 10th c. During the feudal period, it was the seat of powerful feudal princes, and several times suffered from the invasions of the Mongols. The town has a vast *gostinoidvor*, or market-place, nearly as lively as that of Moscow, and a quay on the Volga, about 2 m. long. Though possessing large stores of linen fabrics, flax, iron, flour, and grain, J. is but a second-rate commercial place on the Volga, the principal trade being concentrated at Rybinsk, 54 miles up the river, and at Rostof. Chemical works, principally of white lead and minium, constitute a sort of specialty of the town and its staple industry; next come several tanneries, extensive flour-mills on the Kotorosl, and a recently built cotton-mill of 40,000 spindles. The celebrated silk, and especially linen and damask factories, are at present on the decline. The population of J. is increasing with the wealth of the town, owing to the development of steam-navigation on the Volga and the Kama. J. has a law college, founded 1805. Pop. (1880) 30,300; (1885) 34,799; (1897) 70,610.

JAROSLAV, GOVERNMENT OF: one of the central provinces of European Russia; about 14,000 sq. m. The soil is generally not fertile, it hardly supplies the wants of the inhabitants, and compels industry; so that the province furnishes nearly all Russia with the best carpenters, masons, smiths, etc. The staple industry is dressing, spinning, and weaving flax, which occupies more than 25,000 hands, mostly near Jaroslav, Uglich, and Venkoe-Selo. In the

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n. districts of Mologa and Poshekhonje the whole population of many villages manufacture nails, springs, and other hardware. The inhabitants of the Rostof district have the reputation of being the best kitchen-gardeners and fowl-breeders of the empire. The Volga crosses the govt. from w. to e., and gives special impulse to its industry. The inhabitants are remarkably handsome in form and feature. The govt. is div. into nine districts. Pop. (1880) 1,052,000; (1887) 1,126,891; (1897) 1,072,478.

JARRED, JARRING: see under JAR.

JARROW-, *jār'rō* (or YARROW-, *yār'rō*) ON-TYNE, -*ōn-tīn*: town of Durham, England, on the s. bank of the Tyne river, 3 m. s.w. of S. Shields, 7 m. s.e. of Newcastle, 240 m. n.n.w. of London. It has extensive ship-building yards, iron foundries, and manufactories of paper and chemicals, and in its immediate neighborhood are several great coal mines. The new Tyne docks erected on Jarrow Slake with quays and adjacencies cover 300 acres, of which 50 are water surface with a tidal basin of 10 acres. These docks have greatly increased the trade of J. Of coal alone 4,000,000 tons were shipped thence in a single year. The parish church of St. Paul retains some fragments of the Saxon edifice founded about 685, and is said to contain the oak chair and relics of the Venerable Bede (q.v.). Ruins of the monastery begun by Biscop 681 and consecrated 685 are found close by. Other buildings of note are the various chapels, mechanics' institute, and the hospital. J. was a local board district prior to 1875, and was then constituted a municipal borough. Pop. (1901) 34,294.

JARVES, *jār'vès*, JAMES JACKSON: 1818, Aug. 20—1888, June 28; b. Boston: author. A weakness of the eyes prevented his entering Harvard College, for which he had prepared, and led him to extensive foreign travel. After visiting Cal., Mexico, Central America, S. America, and various Pacific islands, he settled in Honolulu 1838, established *The Polynesian*, the first newspaper published in Hawaii, 1840; was made director of the govt. press and his newspaper the official organ of the govt. 1844; was appointed special commissioner of Hawaii to negotiate treaties with the United States, France, and Great Britain, 1849; and after concluding this business, made his residence alternately in Rome and Florence, and began forming a gallery of old masters illustrating the history of Italian art. He was elected honorary member of the *Acad. delle Belle Arti* in Florence, was U. S. vice-consul and acting consul in Florence 1879-82, and commissioner of Italy for the Boston exhibition 1882-3. His collection of old masters became the prop. of Yale Univ., a second of old masters and antique sculpture went to the Holenden gallery in Cleveland, and his collection of antique and modern Venetian glass was given by him to the Metropolitan Museum of Art, New York. His numerous publications include *A History of the Hawaiian or Sandwich Islands* (1843); *Scenes and Scenery in the Sandwich Islands* (1844); *Parisian Sights and French*

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Principles seen through American Spectacles, 2 vols. (1853); *Art Hints, Architecture, Sculpture, and Painting* (1855); *Kiana, a Tradition of Hawaii* (1855); *Italian Sights and Papal Principles seen through American Spectacles* (1855); *Confessions of an Inquirer*, 3 parts (1857-69); *Art Studies: The Old Masters of Italy* (1861); *The Art Idea, Sculpture, Architecture, and Painting in America* (1866); *Art Thoughts: The Experiences and Observations of an American Amateur in Europe* (1869); *Glimpses at the Art of Japan* (1876); and *Italian Rambles* (1884).

JARVIS, *jár'vīs*, ABRAHAM. D.D.: 1739, May 5—1813, May 3; b. Norwalk, Conn.: bishop of the Prot. Episc. Church. He graduated at Yale College 1761, was ordained deacon and priest in London 1764, became rector of Christ Church, Middletown, Conn., the same year, declined a first election as bp. to succeed Bp. Seabury 1796, accepted the second and was consecrated 1797, and was settled in New Haven from 1803 till death.—His son, SAMUEL FARMER J., D.D., LL.D.: 1786, Jan. 10—1851, Mar. 26; b. Middletown, Conn., graduated at Yale College 1805, was ordained priest in the Prot. Episc. Church 1810, became prof. of biblical criticism in the Gen. Theol. Seminary 1819, rector of St. Paul's Church, Boston 1820, prof. of Oriental literature in Trinity College, Hartford 1835, and historiographer to the Prot. Episc. Church 1838. He received the degree D.D. from the Univ. of Penn. 1819, and LL.D. from Trinity College 1837.

JARVIS, JOHN WESLEY: 1780-1840, Jan. 12; b. S. Shields, England: painter. He was named after his uncle the celebrated Methodist, was brought to Philadelphia by his father when 5 years old, educated himself, wanted to study painting but was discouraged by Stuart, removed to New York and became an engraver, and first exhibited his art talent in executing profiles on glass in black and gold leaf. From this he began painting miniatures, and afterward portraits in oil. He made a thorough study of anatomy, and after his fame was established painted with great rapidity and showed a genius for indicating the characteristic traits of his subjects. At different times he lived in New York, Baltimore, Richmond, Charleston, and New Orleans. He was a brilliant raconteur and exceedingly popular. Among his portraits are those of Hull, Perry, Bainbridge, Swift, Brown, McDonough (in the New York city hall), Randolph, Morris, Tompkins, Benson (in the New York Hist. Soc.), Clinton, Bp. Moore, and Fitz-Greene Halleck.

JASEY, n. *jā'zī* [corruption of *Jersey*, and probably so called from being made of or resembling Jersey yarn]: a wig; a head of bushy hair.

JASHER, *jā'sher*, BOOK OF [Heb. *Sepher ha-yashar*, 'the Book of the Upright'; rendered by the LXX. *Biblion tou Euthous*, and by the Vulgate, *Liber Justorum*; but the Peshito (Syriac version) has *Sepher Hashir*, 'Book of Praises or Hymns']: one of the lost books of the ancient Hebrews; quoted in the Bible twice (Josh. x. 13 || Sam.

JASMIN.

i. 18). Regarding its character and contents, there has been much speculation. Talmudic and later Jewish authorities identified it variously with Genesis (sometimes called 'the Book of the Upright'), Deuteronomy, Judges, etc., to all which notions there is the fatal and obvious objection that the two quotations from it which survive are not found in any of these books, and refer to incidents later in the national history. The conjecture of the Syriac and Arabic translators has been adopted by Lowth, Herder, and other scholars, viz., that the Book of J. was a collection of national ballads—a Hebrew minstrelsy, in short—recording the warlike deeds of the national heroes, or singing the praises of otherwise celebrated men. Gesenius is inclined to the same view, and suggests that it may have acquired its name, 'the Book of the Upright,' from having been written chiefly in praise of upright men. Donaldson, in an ingenious work, *Jashar, or Fragmenta Archetypi, Carminum Hebraicorum in Masorethico Veteris Testamenti Textu passim tessellata*, contends for its being a composition of the age of Solomon, and a work of Nathan and Gad. He conceives that it originated in the desire of the more religious of the community to possess a record of the national history which should chiefly set forth the righteousness of the true Hebrews, and he attempts to extract from the so-called canonical books of the Old Testament such passages as he believed to have originally formed part of it. It must be added, however, that Dr. Donaldson's theory has met with little favor either from the mass of German scholars or from the few in England who are competent to consider the question.—several pretended books of J. have been put forth. Three were written in Hebrew, and published, 1394, 1544, 1625. A fourth, purporting to be an English translation, was written by an infidel printer at Bristol, Eng., secretly printed, and published 1751.

JASMIN, *zhâs-măng'*, JACQUES: 1798, Mar. 6—1864, Oct. 4; b. Agen: most eminent modern patois poet of France, and in the words of his ardent admirers, 'the last of the troubadours.' He has given in his *Soubenis* a humorous account of his early life. According to it, he was of very humble birth, and was set to learn the trade of a hair-dresser, which agreed well with that of poet, as he himself says, because both are a kind of head-work. His poetry is full of beauty and power; the pathos of his serious, and the wit of his comic pieces, are unequalled, and both have been received with enthusiasm in France, and other parts of Europe. His most admired pieces all are written in the Agen patois, a picturesque and melodious dialect, spoken by the illiterate and rustic, which he partly remodelled as a literary medium. He used to recite his pieces in public. He was made a chevalier of the Legion of Honor 1846. J.'s principal works are *Me cal Mouri* (1825); *Lou Chalibari* (The Charivari, 1825), a comic poem; *L'Abuglo de Castel-Cuille* (The Blind Youth of Castel-Cuille, 1836), translated by Longfellow; and *Las Papillotos de Jasmin* (The Curls of Jasmin), of which the first part appeared 1835, and the second 1843. He died at his native town.

JASMINE—JASPER.

JASMINE, n. *jäs'mîn*, also spelled **JESSAMINE**, n. *jës'sä-mîn* [F. *jasmin*; Sp. *jazmin*—from Ar. *yasmin*], (*Jasminum*): genus of plants of nat. ord. *Jasminaceæ*. This order is allied to *Oleaceæ*, and contains about 100 species of shrubs, some of them climbing, and many of them having exquisitely fragrant flowers. They are natives chiefly of warm parts of Asia. Many belong to the genus *J.*, which has its calyx and corolla each 5 or 8-cleft, two stamens attached to and included within the tube of the corolla, and a two-lobed berry, one of the lobes generally abortive. The **COMMON J.** (*J. officinale*) is a native of s. Asia, but now naturalized in s. Europe, and as far n. as the Tyrol and Switzerland. In more northern regions, it is much cultivated in gardens, but does not easily endure severe winters. It is a shrub six to ten ft. high, with evergreen pinnate leaves, the terminal leaflet the largest, and very fragrant white flowers. The flowers were formerly employed in medicine, for strengthening the nervous system, but are now used only for preparing *Oil of Jasmine*, a delicious perfume. The commercial oil of *J.*, however, is not the pure essential oil, but merely oil of ben flavored with it, and is prepared by placing layers of the flowers alternately with layers of cotton soaked in oil of ben.—*J. grandiflorum*, native of the E. Indies, has flowers still more fragrant, from which, and from those of *J. Sambac* also, oil of *J.* is made. The flowers of *J. Sambac* are often scattered about in houses and temples in the E. Indies, to diffuse their fragrance: florists have several varieties of it.—Several other species, some with erect, some with twining stems, are common in gardens and green-houses: some have white and some have yellow flowers. A very fine species is *J. grandiflorum* or **Catalonian J.** (in Europe, Malabar *J.*). *J. nudiflorum* has yellow odorless flowers, which bloom only in spring: it is a hardy species.—Oil of *J.* cannot be obtained from *J.* flowers by distillation.

JAS'MINE, **CAPE**; or **CAPE JES'SAMINE**: 'tropical and subtropical shrub-plant of the genus *Gardenia*, family *Rubiaceæ*. It is neither related to the true jasmine nor a native of the Cape of Good Hope, the best known species, *Gardenia florida*, having been found originally in China, whence it was taken to England 1754. Under cultivation it yields large white and fragrant flowers, and oblong orange-colored berries, which the Chinese and Japanese use in making yellow silk dye. In England and the United States it is cultivated as a bedding-plant, in hot-houses, and in some localities in the open air, and is popular for garden and cemetery ornamentation.

JAS'MINE, **CAROLINA**; or **YELLOW JES'SAMINE**: see **GELSEMIUM**.

JA'SON: see **ARGONAUTS**.

JASP, n. *jäsp*: OE. for **JASPER**.

JASPER, n. *jäs'për* [OF. *jaspre*; F. *jaspe*; It. *jaspide*—from L. and Gr. *iäspîs*]: mineral generally regarded as one of the varieties of Quartz (q.v.), and distinguished by its opacity, owing to a mixture of clay or other substances

JASPER—JASSY.

with the silica of which it is chiefly composed. There are many kinds of J., some of them of one color, as brown, red, yellow, green, white, blue or black; some variously striped, spotted, or clouded with different colors. J., though counted among precious stones, is a very abundant mineral; it is found in veins and embedded masses in many rocks, sometimes appears as a rock of which whole hills are formed, and is very common in the shape of pebbles. It has been prized from the most ancient times for ornamental purposes, as it takes a high polish. Many kinds of it are very beautiful; and it can often be obtained in pieces of large size, so that it has been much used not only for rings, seals, and other small articles, but for the decoration of palaces. One of the best known kinds of J. is found in Egypt, *Egyptian Jasper*: it is generally yellow, prettily mixed with brown. Possibly the ancients classed as J. some stones which now are called chalcedony and agate, while our J. was known to them as *achates*. The original J. appear to have been green.—J. with very distinct stripes is called *Ribbon Jasper*.—The kind called *Porcelain Jasper* is rather rare: it is often full of minute holes, or is cracked in all directions, and is regarded as a kind of natural porcelain, formed by the action of fire. JASPID'EAN, a. -*pīd'ě-ăn*, also JASPID'EOUS, a. -*e-ūs*, like jasper; consisting of jasper. JAS'PERY, a. -*pēr-ī*, having the character of jasper.

JASPER, *jās'pēr*, WILLIAM: about 1750–1779, Oct. 9; b. S. C.: soldier. At the beginning of the Revolutionary war he enlisted in the 2d S. C. regt., was soon afterward promoted sergt., and in the attack on Fort Moultrie by a British fleet 1776, June 28, distinguished himself by leaping out through an embrasure at the height of the bombardment, recovering the flag that had been shot from its staff, tying it to a sponge-staff, and standing with it on the ramparts until another staff was erected for it. Gov. Rutledge rewarded him for his heroism by presenting him with his own sword, and offered him a lieutenant's commission, which he declined through inability to read or write. He was employed on picket and outpost duty, made a number of daring raids into the enemy's country, and was mortally wounded while attempting to fasten the colors, presented by Mrs. Elliott to his regt., on the parapet of Spring Hill redoubt during D'Estaing and Lincoln's attack on that place in the assault on Savannah 1779, Oct. 9. A public square in Savannah and a co. in Ga. are named after him, and a monument commemorating his daring feat has been erected in Savannah.

JASSY, *yās'sē*, or JASSII, or JASCHI: capital of Moldavia, the n. division of Rumania; picturesquely situated on the slope of the Kopoberg Mountains, near the borders of Bessarabia, about ten m. w. of the Pruth. It is irregularly built and dirty, and in its crooked streets the palatial mansion of the Bojar—the Moldavian noble—alternates with huts and hovels. It contains about 90 ecclesiastical edifices, one of which dates from the 14th c. On a height is the Prince's Court, formerly the residence of the gov. of Mol-

JASZBERENY—JAUER.

davia. The streets are covered with dust in summer and with mud in winter, on which account, conveyances are in great requisition, and every one except the Jew and the mendicant employs a drosky. In J., there are 1,300 private carriages, 5,000 droskies, and 12,000 horses. The manufactures of the town are few; there is considerable trade in agricultural produce. Pop. (1900) 78,067, of whom many are Jews, Greeks, Armenians and Germans.

JASZBERENY, *yáss-bā-rāñ'*: considerable town of Hungary, in the county of Jasygia and Kumania, on both banks of the Zagyva, 42 m. e. of Pesth. The people are employed in agriculture and in the trade in corn, cattle, and horses. Pop. (1880) 21,507; (1890) 24,300.

JĀTAKA [literally, 'relating to birth']: with the Buddhists, the name of a work or a series of books containing an account of 550 previous births of Sākya Muni, or the Buddha. Several tales that pass under the name of Æsop's fables are found in this collection of legends.

JATIVA, *chá'tē-vá* (or **XATIVA**), **SAN FELIPE DE**: town of Spain, province of Valencia, 22 m. s. of the city of that name. Its climate is delicious, and the well-watered plain on which it stands is luxuriant in fruits and flowers. Its trade and manufactures are unimportant. Pop. 14,000.

JĀTS, *jāts*, or **JAUTS**, *jawts*: race of people inhabiting chiefly the n.w. portion of India between the Indus and the Ganges rivers, though also widely spread through Sind, Baluchistan and the N.W. Provinces; estimated to comprise two-fifths the entire population of the Punjab and half that of the Rajput states; and regarded by various ethnologists as descendants of the first Aryan settlers in the valley of the Indus, of the ancient Getæ, Dacians, Huns, Avars, Yuechi, and other lost tribes, and as progenitors of the gypsies. They are tall, extremely dark, well formed, quite nomadic in habit, ferocious in war, and expert agriculturists and stock-breeders. Those settled on the Ganges and Jamna are divided into two great clans, while those in the Punjab comprise more than 100 tribes. In religion they generally accept the belief of their locality, and the whole race is about evenly divided between Mohammedan, Brahman, and Sikh doctrines. Their language is a variety of Sindhi, and is a pure Sanskrit tongue, exhibiting unusually early grammatical forms. The J., with a tribe called Meds, comprised the bulk of the population of Sind at the time of the Mohammedan conquest, A.D. 712. They served in Mohammed Kasim's army, vigorously resisted the Arab invaders, were overthrown by Amran 836, invaded Mansura 1025, sustained memorable sieges at Bhartpur, 1805 and 26, and were subdued by the British in the latter year.

JAUER, *yow'ér*: interesting old town in Silesia, Prussia, on the Neisse, 10 m. s.s.e. of Liegnitz. The town is famous for its sausages; and there is a weekly grain-market, regularly held since 1404, and the most important in Silesia. J. was formerly very prosperous, being the only market

JAUJA—JAUNDICE.

for the linen-trade of Silesia; but the Thirty Years' War reduced its extent and prosperity. Pop. (1885) 11,178.

JAUJA, *chow'chá*: town, cap. of the province of Jauja, dept. of Junin, Peru; on the e. bank of the Jauja river, 108 m. e. by n. of Lima. It is one of the most ancient towns in Peru, was cap. of the country under the Spanish viceroyalty till 1535, is beautifully located, and contains several churches and schools, cavalry barracks, the missionary convent of Ocapa, ruins of ancient Indian castles, and weaving factories. There are rich silver mines in its vicinity. Pop. about 15,000.

JAULNA, *javol'na*: town of India, Nizam's dominions, in a rugged country, 38 m. e. of Aurungabad. It has a fort and cantonment for British troops. On the opposite bank is the old town of J., now much decayed. Pop. 10,000.

JAUMANGE, n. *zhō-mǎngzh'* [F. *jaune*, yellow; *manger*, meat]: a variety of blancmange; Dutch flummery.

JAUNCING, n. *jawn'sing*: in *OE.*, for *jaunting*, pleasure-seeking.

JAUNDICE, n. *jân'dīs* [F. *jaunisse*, the yellow disease—from F. *jaune*; OF. *jalne*, yellow—from L. *galbīnus* or *galbānus*, greenish-yellow]: a disease of the liver characterized by yellowness of the skin and of the conjunctiva of the eye, and general languor. **JAUN'DICED**, a *-dist*, affected with jaundice; prejudiced; biassed. **JAUNDICED EYE**, an eye which sees faults and blemishes which do not exist.—*Jaundice* arises from the presence of the coloring matter of the bile in the blood and tissues, and is a symptom of various disordered conditions of the system, rather than a special disease.

With this coloring of the skin and eyes the following symptoms are associated: the feces are of grayish or dirty-white tint, in consequence of the absence of bile, and the urine is of the color of saffron, or is even as dark as porter, in consequence of the presence of the coloring matter of the bile. There is sometimes, but not in the majority of cases, an extreme itching of the skin. It is a popular belief, as old as the time of Lucretius—

Lurida præterea fiunt quæcunque tumentur arquati—

that to a jaundiced eye everything appears yellow. This, however, like the preceding, is only an occasional symptom.

The most obvious cause of jaundice is some obstruction in the gall-ducts, preventing the normal flow of bile into the intestine. This obstruction may arise in any of the following ways: 1. It may be caused by the impaction of a gall-stone in the common hepatic duct: see **LIVER**. In this case, the jaundice is usually of short duration, and disappears soon after the gall-stone has passed into the intestine. 2. Another cause of jaundice is the obstruction of the gall-ducts by cancerous disease of the head of the pancreas, by tumors in the liver, or by a diseased condition of the duodenum, the portion of small intestine into

IRRAWADDY—IRREDENTIST.

n. -*ř-tř*, want of reason. **IRRATIONAL NUMBERS**, a term applied to those roots of numbers which cannot be accurately expressed by a finite number of figures: e.g. $\sqrt{2}$ is an irrational number. If the diameter of a circle is one foot, the circumference is an irrational number. Irrational numbers have been defined to be numbers incommensurable with unity. They are commonly termed *Surds*.—**SYN.** of 'irrational': foolish; preposterous; unreasonable.

IRRAWAD'DY, or **IRAWADI**, *ř-a-wad'ř*: the great river of Farther India. It rises on the borders of Tibet, near lat. 28° n., and long. 97 e.; flows nearly due s. through Burmah and British Burmah, and is about 1,200 m. in length. After receiving several tributaries, including the Mogonny, the Bhamo, and the Kwendween, it forms its delta about 17° n. This comprises about 8,000 sq. m. of forest and pasturage, intersected by a network of the smaller branches of the stream. The I. is navigable, even in the dry season, by vessels of 200 tons for 500 m., and steamers of 4 ft. draught reach Bhamo, over 600 m. up; in the rainy season, 800 m. are practicable. Mandalay, Ava, Amarapura, Rangoon, and Bassein, are on or near the banks of the Irrawaddy. In all the three Burmese wars, it constituted the line of advance for British armies. For newly-formed division of I., see **PEGU**.

IRRECLAIMABLE, a. *ř'rě-klām'ă-bl* [*in*, not, and *reclaimable*]: not to be reclaimed; that cannot be reformed. **IR'RECLAIM'ABLY**, ad. -*blř*.

IRRECONCILABLE, a. *ř'rěk'ön-sil'ă-bl* [**F.** *irréconcilable*: *in*, not, and **Eng.** *reconcilable*]: not to be recalled to a state of friendship or kindness; that cannot be appeased or subdued; that cannot be made to agree or be consistent. **IRREC'ONCIL'ABLY**, ad. -*blř*. **IRREC'ONCIL'ABLENESS**, n. -*bl-nēs*. **IRRECONCILED**, a. *ř'rěk'ön-sıld*, not reconciled; not atoned for. **IRREC'ONCILIA'TION**, n. -*sil-i-ă-shün*, want of reconciliation.

IRRECOVERABLE, a. *ř'rě-křv'ěr-ă-bl* [**L.** *in*, not; **F.** *recouvrable*, recoverable: *in*, not, and **Eng.** *recoverable*]: not to be recovered or repaired; that cannot be regained or remedied. **IR'RECOV'ERABLY**, ad. -*blř*. **IR'RECOV'ERABLENESS**, n. -*bl-nēs*.—**SYN.** of 'irrecoverable': irretrievable, irremediable; irreparable; incurable.

IRRECUPERABLE, a. *ř'rě-křp'ěr-ă-bl* [**F.** *irrecuperable*—from **L.** *in*, not; *recupērārē*, to recover]: in *OE*, irrecoverable.

IRREDEEMABLE, a. *ř'rě-dēm'ă-bl* [*in*, not, and *redeemable*]: that cannot be redeemed; not subject to be paid at the nominal value, as government stocks. **IR'REDEEM'ABLY**, ad. -*blř*.

IRREDENTIST, n. *ř-rě dēnt'řst* [**It.** *irredenta*; *řr*, *in*, not; *redenta*, fem. of *redento*, pp. of *redimere*, to redeem]: in Italian politics, one of the party of the Left, in whose accession to office, 1876, the cry of "Italia Irredenta," and pledges in favor of the unredeemed territory, were powerful

IRREDUCIBLE—IRREGULAR.

factors. Unredeemed Italy was held to include Trieste and the Trentino, in the occupation of Austria; the canton of Ticino, in Switzerland; and Nice and Malta, in the respective possession of France and England. The taking office by the Left was viewed with alarm in many countries, especially in Austria; the movement, however, had no solid foundation in the feeling of the Italian people. **IRREDENTIST**, a. belonging to, or in any way connected with the Irredentists.

IRREDUCIBLE, n. *ir'rě-dū'si-bl* [*in*, not, and *reducible*]: that cannot be brought back to a former state, or changed to a different one. **IRREDUCIBLY**, ad. *-si-blŭ*. **IRREDUCIBLENESS**, n. *-bl-nēs*. **IRREDUCIBLE CASE**, occurring in the solution of Cubic Equations (q.v.) by Cardan's method when p is negative, and $\frac{p^3}{27}$ greater than $\frac{q^2}{4}$ (abstracting from the sign). These conditions render $\sqrt{\left(\frac{q^2}{4} + \frac{p^3}{27}\right)}$ an imaginary quantity, and thus Cardan's formula fails in its application. The difficulty is met by the aid of trigonometry.

IRREFORMABLE, a. *ir'rě-fawrm'ă-bl* [*ir*, not, and *reformable*]: that may not or cannot be revised or set aside; that may not lawfully be judged or censured.

IRREFRAGABLE, a. *ir-rěf'ră-gă-bl* [*in*, not, and *refragable*; F. *irréfragable*—from mid. L. *irrefragabilis*, not to be withstood: It. *irrefragabile*]: that cannot be refuted or overthrown; incontestable. **IRREFRAGABLY**, ad. *-gă-blŭ*. **IRREFRAGABLENESS**, n. *-bl-nēs*, quality of being incapable of confutation.—**SYN.** of 'irrefragable': incontrovertible; unanswerable; indisputable; unquestionable; indubitable; undeniable; irrefutable.

IRREFRANGIBLE, a. *ir'rě-frăn'jŭ-bl* [*in*, not, and *refrangible*]: that cannot be refracted.

IRREFUTABLE, a. *ir'rě-fŭ-tă-bl* [mid. L. *irrefutabilis*: *in*, not, and Eng. *refutable*]: that cannot be disproved or overthrown by argument; unanswerable. **IRREFUTABLY**, ad. *-blŭ*.

IRREGULAR, a. *ir-rěg'ŭ-lēr* [mid. L. *irregulāris*: *in*, not, and Eng. *regular*]: not according to usual forms or rules; not according to established principles or customs; not in conformity to law, or the usual operations of nature; wanting symmetry; not regular, as regards mode of life; vicious: N. a soldier not in the regular service; one not following any fixed rule; in *bot.*, a flower in which the parts of any of the verticils differ in size. **IRREGULARLY**, ad. *-lŭ*. **IRREGULARITY**, n. *-lăr'ŭ-ti* [F. *irrégularité*]: neglect of law, form, or method; deviation from rule; vice. **IRREGULAR BONES**, in *anat.*, bones of a complex figure, as vertebræ. Generally they are situated along the median line of the body. Called also mixed bones. **IRREGULAR REFLECTION**, in *optics*, reflection in all directions.—**SYN.** of 'irregular a.': unsystematic; abnormal; unmethodical; anomalous; erratic; devious; eccentric; crooked; variable; unsettled,

IRRELATIVE—IRREPRESSIBLE.

desultory; mutable; changeable; immoderate; intemperate; wild; disorderly; inordinate; unconformable; unsymmetrical.

IRRELATIVE, a. *īr-rĕl'ă-tīv* [*in*, not, and *relative*]: unconnected. **IRREL'ATIVELY**, ad. *-lĭ*.

IRRELEVANT, a. *īr-rĕl'ĕ-vănt* [L. *ir*, not; *relĕvans*, or *relĕvan'tem*, making light—from *lĕvis*, light: *ir*, not, and Eng. *relevant*—*lit.*, that does not relieve or lighten]: not applicable; not to the purpose; not serving to support; in *Scotch law*, denoting that what is said or put forward by an opponent in an action has no bearing on the subject, even if it were true. The corresponding term, in English law, is demurrable: see **DEMUR**. **IRREL'EVANTLY**, ad. *-lĭ*. **IRREL'EVANCY**, n. *-văn-sĭ*, or **IRREL'EVANCE**, n. *-văns*, the quality of not being applicable.

IRRELIGION, n. *īr'rĕ-lĭj'ăn* [*in*, not, and *religion*: F. *irrĕligion*—from L. *irrĕligiōnĕm*]: contempt of religion, or the want of it; profaneness; impiety. **IR'RELIG'IOUS**, a. *-lĭj'ūs* [L. *irrĕligiōsūs*]: ungodly; profane; impious; wicked. **IR'RELIG'IOUSLY**, ad. *-lĭ*. **IR'RELIG'IOUSNESS**, n. quality or state of being irreligious; want of religion.

IRREMEDIABLE, a. *īr'rĕ-mĕ-dĭ-ă-bl* [F. *irremĕdiable*—from L. *irrĕmĕdiabilis*: *in*, not, and Eng. *remediable*]: that cannot be cured; not to be corrected or redressed. **IR'REME'DIABLY**, ad. *-blĭ*. **IR'REME'DIABLENESS**, n. *-bl-nĕs*.

IRREMISSIBLE, a. *īr'rĕ-mĭs'sĭ-bl* [F. *irrĕmissible*—from mid. L. *irrĕmissĭbĭlis*: *in*, not, and Eng. *remissible*]: that cannot be forgiven or remitted. **IR'REMIS'SIBLY**, ad. *blĭ*. **IR'REMIS'SIBLENESS**, n. *-bl-nĕs*, quality of being not to be pardoned.

IRREMOVABLE, a. *īr'rĕ-mōv'ă-bl* [*in*, not, and *removable*]: that cannot be moved or changed; that cannot be removed from office. **IR'REMO'VABLY**, ad. *-blĭ*. **IR'REMOVABIL'ITY**, n. *-bĭl'ĭ-tĭ*, quality or state of being irremovable.

IRRENOWNED, a. *īr'rĕ-nōwnd'* [*ir*, not, and *renowned*] in *OE.*, wanting in renown.

IRREPARABLE, a. *īr-rĕp'ă-ră-bl* [F. *irrĕparable*—from L. *irrĕpărăbilis*: *in*, not, and Eng. *reparable*]: that cannot be repaired or mended; not to be recovered, retrieved, or remedied. **IRREP'ARABLY**, ad. *-blĭ*. **IRREP'ARABIL'ITY**, n. *-bĭl'ĭ-tĭ*, state of being beyond repair or recovery.

IRREPEALABLE, a. *īr'rĕ-pĕl'ă-bl* [*in*, not, and *repealable*]: that cannot be revoked or annulled. **IR'REPEAL'ABLY**, ad. *-blĭ*.

IRREPREHENSIBLE, a. *īr-rĕp'rĕ-hĕn'sĭ-bl* [F. *irrĕprĕhensible*—from L. *irrĕprĕhensĭbĭlis*, without cause for blame or censure: *in*, not, and Eng. *reprehensible*]: not reprehensible; not to be blamed or censured. **IRREP'REHEN'SIBLY**, ad. *-blĭ*.

IRREPRESSIBLE, a. *īr'rĕ-prĕs'sĭ-bl* [*in*, not, and *repressible*]: that cannot be repressed or subdued; not to be restrained. **IR'REPRES'SIBLY**, ad. *-blĭ*.

IRREPROACHABLE—İRREVERENT.

IRREPROACHABLE, a. *ır'rě-prōch'ă-bl* [F. *irréproachable*: *in*, not, and Eng. *reproachable*]: free from blame; innocent. **İR'REPROACH'ABLY**, ad. *-blī*. **İR'REPROACH'ABLENESS**, n. *-bl-nēs*.

İRREPROVABLE, a. *ır'rě-próv'ă-bl* [F. *irréprovable*: *in*, not, and Eng. *reprovable*]: that cannot be justly reproved or blamed. **İR'REPROV'ABLY**, ad. *-ă-blī*.

İRRESISTANCE, n. *ır'rě-zist'ăns* [*in*, not, and *resistance*]: passive submission; forbearance to resist.

İRRESISTIBLE, a. *ır'rě-zist'ī-bl* [F. *irrésistible*—from mid. L. *irrésistib'ilis*: *in*, not, and Eng. *resistible*]: that cannot be resisted or opposed. **İR'RESIST'IBLY**, ad. *-blī*. **İR'RESIST'IBILITY**, n. *-bīl'ī-tī*, or **İR'RESIST'IBLENESS**, n. *-bl-nēs*, quality of being irresistible; power beyond successful resistance.

İRRESOLUBLE, a. *ır-rěž'ō-lū-bl* [*in*, not, and *resoluble*]: incapable of being dissolved or set free; that cannot be resolved into parts.

İRRESOLUTE, a. *ır-rěž'ō-lót* [*in*, not, and *resolute*: F. *irrésolu*, irresolute]: not firm or constant in purpose; not decided; wavering; given to doubt. **İRRES'OLUTELY**, ad. *-lī*. **İRRESOLUTION**, n. *ır-rěž'ō-ló'shūn* [F.—L.]: want of resolution; want of decision in purpose. **İRRES'OLUTENESS**, n. *-lót nēs*.—**SYN.** of 'irresolute': unsettled; unstable; unsteady; vacillating; undetermined; doubting; inconstant; fickle.

İRRESOLVABLE, a. *ır'rě-zól'vă-bl* [*in*, not, and *resolvable*]: that cannot be resolved.

İRRESPECTIVE, a. *ır'rě-spěk'tiv* [*in*, not, and *respective*]: not regarding; not having respect to, as circumstances. **İR'RESPEC'TIVELY**, ad. *-lī*. **Note.**—**İRRESPECTIVE** is followed by *of*.

İRRESPIRABLE, a. *ır-rěs'pī-ră-bl* [*in*, not, and *respirable*]: unfit for respiration.

İRRESPONSIBLE, a. *ır'rě-spōn'si-bl* [*in*, not, and *responsible*]: not responsible; not liable or able to answer for consequences. **İR'RESPON'SIBLY**, ad. *-blī*. **İR'RESPON'SIBILITY**, n. *-bīl'ī-tī*.

İRRETRIEVABLE, a. *ır'rě-trěv'ă-bl* [*in*, not, and *retrievable*]: not to be retrieved; not to be recovered or repaired. **İR'RETRIEV'ABLY**, ad. *-blī*. **İR'RETRIEV'ABLENESS**, n. *-bl-nēs*.—**SYN.** of 'irretrievable': irremediable; incurable; irrecoverable; irreparable.

İRRETURNABLE, a. *ır'rě-těrn'ă-bl* [*in*, not, and *returnable*]: not to be returned.

İRREVEALABLE, a. *ır'rě-věl'ă-bl* [*in*, not, and *revealable*]: that may not be revealed. **İR'REVEAL'ABLY**, ad. *-blī*.

İRREVERENT, a. *ır-rěv'ěr-ěnt* [*in*, not, and *reverent*: F. *irrévérent*—from L. *irreverens*, or *irrévēren'tem*, that does not show veneration: It. *irreverente*]: wanting in due regard for the Supreme Being; wanting in respect to superiors; expressing irreverence. **İRREV'ERENTLY**, ad. *-lī*.

IRREVERSIBLE~IRRIGATE.

IRREV'ERENCE, n. -ěns [F.—L.]: want of due regard for the Supreme Being; want of veneration or reverence.

IRREVERSIBLE, a. ĭr'rě-věr'sĭ-bl [in, not, and *rever-sible*]: not to be changed; not to be recalled. IR'REVER'SIBLY, ad -blĭ. IR'REVER'SIBLENESS, n. -bl-něs.—SYN. of 'irreversible': irrevocable; irrepeatable; unchangeable.

IRREVOCABLE, a. ĭr-rěv'ō-kā-bl [F. *irrévocable*—from L. *irrevocabĭlis*: in, not, and Eng. *revocable*]: that cannot be recalled or annulled; not to be revoked or reversed.

IRREV'OCABLY, ad. -blĭ.

IRRIGATE, v. ĭr'rĭ-gāt [L. *irrigātūs*, watered, irrigated—*from in, on; rĭgō, I moisten or water: It. irrigare*]: to moisten land by causing water from a stream or canal to flow upon and spread over it; to water. IR'RIGATING, imp. IR'RIGATED, pp. watered. IR'RIGA'TION, n. -gā'shŭn [F.—L.]: the operation of causing water from a stream or canal to flow upon and spread over land with the view of nourishing and increasing the growth of plants. IRRIGUOUS, a. ĭr-rĭg'ū-ūs, watery; moist: dewy; well watered.

IRRIGATION.

IRRIGATION: method of producing or increasing fertility in soils by causing water from a stream or canal to flow upon and spread over land at stated periods. I. was probably resorted to first in countries where much of the land must otherwise have remained barren from drought; as in Egypt, where it was extensively practiced nearly 2,000 years B.C., and where great systems of canals and artificial lakes were formed for the purpose. Extensive works, intended for I. of large districts, existed in times of remote antiquity in Mesopotamia, Persia, India, China, and other parts of the East; and in such of these countries as have not entirely lost their ancient prosperity, such works still exist. In many parts of the world, the necessity of I., at least at certain seasons of the year, is so strongly felt, that the agriculture even of comparatively rude tribes depends on the facility with which it can be accomplished. Some plants also require a very abundant supply of water, and I. has become general where their cultivation prevails; e.g. rice, the principal grain of great part of Asia. I. is supposed to have been introduced into Britain by the Romans, but was little practiced till the beginning of the present century. In Europe, I. prevails in the south, where it was extensively practiced by the Romans, from whom it was adopted by the Lombards; and it is most extensively practiced in Lombardy, and in parts of Spain, and of s. France; so that the great plains and valleys of the Po, Adige, Tagus, and Douro, and other rivers, are almost entirely subjected to a systematic I., which prodigiously increases their fertility. The extent of irrigated land in the valley of the Po is estimated at 1,600,000 acres, and the increase of rental thus caused at more than \$4,000,000.

I. in Britain, and in most parts of Europe, except Lombardy, is almost exclusively employed to increase the produce of grass by converting the land into water-meadows. The value of it, even for this one purpose, does not seem sufficiently understood. Poor heaths have been converted into luxuriant meadows by I. alone. But in the countries in which I. is most extensively practiced, the production of all crops depends on it.

The I. of land with the sewage-water of towns is, under another name, the application of liquid manure. In no small degree the water of rivers and of springs depends on its organic and mineral constituents for its fertilizing properties, so that the application of it is not in principle different from that of liquid manure; but it must be borne in mind that the mere abundance of water itself is of great importance for many of the most valuable plants, as the most nutritious substances brought into contact with their roots are of no use to them unless in solution; while it is an additional recommendation of I., that the supply of water most favorable to the growth of many valuable plants is destructive of some others which in many places naturally encumber the soil, as heath, broom, etc. The water used for I. should be free from mud and such impurities as mechanically clog the pores of leaves, or cover

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up the *hearts* of plants, and interfere with their growth. The most successful instance of sewage I. in Great Britain is near Edinburgh, where extensive meadows between Portobello and Leith yield a rent of £20 to £40 an acre; the grass is cut three to five times a year, and as much as ten tons an acre have been obtained at a cutting: see SEWAGE: MANURE.

The method of forming and laying out water-meadows appears by a view of the different species of irrigation.

1. *Bed-work Irrigation*.—This method can be conveniently applied only to ground nearly level. It consists in laying out the ground into sloping beds or ridges, 30 to 40 ft. wide, according to the nature of the soil, having their upper ends lying in a gentle slope from one side to the other of the meadow. Along the upper ends of the beds is drawn the drain or *conductor*, which brings the water from the reservoir or river; and this conductor must be tapered off toward its further end, in order that the diminished supply of water may still overflow. From this conductor, small drains, called *feeders*, are led down along the crown of each ridge. In the lowest part of the meadow, a main-drain, which must be made nearly as large as the conductor, is cut across the lower ends of the beds, and the water, after having served the purpose of irrigation, is led into it by small drains cut in the furrows. The feeders should, like the conductor, taper toward their further extremity, both for the purpose of retarding the velocity of the water, and of preserving a continual overflow along their whole length. On the contrary, the small drains should gradually widen toward their lower extremity, where they meet the main-drain. The dimensions and inclination of the conductor and feeders should be so regulated to the water-supply, that the beds can be wholly laid under water to the depth of about one inch. The expense of bed-work I. as practiced in England ranges from \$100 to \$200 per acre.

2. *Catch-work Irrigation* differs materially from the former; it can be applied to land whether level or not, costs only abt. \$20 per acre; and, in the opinion of many, is quite as effective. The conductor formed as before is led along the highest side of the field, then with the aid of a level, a succession of perfectly level gutters (which, of course, must be winding), are drawn across the field in the same direction as the conductor, and not more than ten yards from each other; these are crossed by feeders running from the conductor to the lowest side of the field, thus forming a kind of checkwork. The main-drain is made as before, and the feeders, which taper toward their lower extremity, serve for small drains. This plan is more effective than the former, when the supply of water is limited, and as it can be applied to a hillside as well as to a level field, its application is rapidly extending.

3. *Subterraneous Irrigation* is applicable only to perfectly level fields, and consists, first, of ditches formed all round the sides. At right angles to these, drains or conduits are drawn across the field in parallel lines. When the land is

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to be irrigated, water is let into the ditches, and thence to the cross-drains, till it rises to the level of the surface; and when the ground is to be laid dry, the side-ditches are emptied by sluices. The bottom of the ditches is below the level of that of the cross drains, so that they serve both as conductor and main-drain.

The first two methods of I. are applied to pasture-lands only, and the third to fens and drained morasses, which are apt to become parched in summer; the last method would be very valuable for land under green crop in cases of drought.

The management of water-meadows requires skill and care. The chief points to be attended to are these: the water, if limited in quantity, must be confined to a part which it can effectually irrigate; too much water or too rapid a flow tends to wash away the soil; the meadow may be kept under water for a fortnight at a time, in Nov., but the time should be diminished till April or May, when regular watering should cease; after the grass is cut or eaten down, the water may be let on for a few days; and it is necessary that between the times of watering the land should be laid perfectly dry. Special precautions are necessary in winter, to guard against any bad effects resulting from frost, etc.—In the w. part of the United States, especially in California, I. is coming largely into use.

The largest arid region in the United States is the tract stretching n. from the lower Rio Grande river, along the e. base of the Rocky Mountains, as far as Fort Edmonton in Canada, and along the w. base a considerable distance into British Columbia. It extends also s. of the United States into n. and central Mexico. The area in the United States is estimated to comprise nearly 1,388,800 sq. m. of public lands. As the total reclaimable area within the arid region has been estimated by Maj. Powell to be sufficient to form 8 states of the size of Ind. and to support an agricultural population of nearly 9,000,000, great attention has been given to I. Cal., Colo., Wyo., and Utah have done much to improve their arid regions, while Kan., N. Mex., and Ariz. have adopted more or less similar systems for their great cattle ranges. The principal plans for conveying moisture to arid tracts are by canals with innumerable laterals, artesian wells, and great reservoirs, in which the rainfall and melting snow are collected in their seasons and stored for use in agricultural and grazing months. Extensive works of the latter kind, patterned after the ancient I. tanks in s. Asia, are now found in Cal., Colo., N. Mex., and Ariz.; a single one, 5 m. above Merced, Cal., cost \$1,500,000, has an area of about 800 acres, is supplied with water from Merced river by a canal 27 m. long, and holds about 5,500,000 gallons. During 1883–87 about \$30,000,000 were invested in I. enterprises in Cal. alone; the value of 'under-land' water increased from 10 to 50 fold; the taxable valuation increased at the rate of \$100,000,000 per year; and the cultivated irrigable land more than doubled. I. measures have been attempted in the

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two Dakotas and Mont., and the great drought there 1889 stimulated the efforts. Wyo. has over 2,750 I. canals, a large body of water being thus diverted from the Laramie river. In Kan. about 400,000 acres are irrigated by ditches that cost nearly \$300,000; in N. Mex. two canals have been constructed to convey water from the Pecos river to the e. part of the terr., at a cost of \$1,000,000, and a number of storage reservoirs (one $7\frac{1}{2}$ m. long by $2\frac{1}{2}$ m.) have lately been built, the united watering capacity being nearly 300,000 acres; in Ariz. \$2,500,000 were expended 1883-89 for I. purposes in the Gila valley alone, benefiting 200,000 acres, while other parts of the terr. are provided with I. canals of various lengths—10, 22, 27, 31, and one 41 m.; and in Colo. there are over 4,000 m. of ditches, supplying more than 2,000,000 acres of rich land, and numerous reservoirs holding 5,000,000—12,150,000 gallons each. In Utah a canal was constructed (1890) to convey water from Bear Lake, in s.e. Ida. (forming a natural reservoir 150 m. sq.), to the great plain n.e. of Salt Lake; the cost was about \$2,000,000, and it irrigates 200,000 acres. Mont. has a number of canals, one 40 m. long; Nev. and Ida. are beginning to provide for I., and have excellent sites for storage reservoirs; and Or. has a large irrigable area, and is building a 50-m. canal. In 1901-2 the U. S. govt. distributed \$7,730,338 among 16 states and territories for the "irrigation of arid lands."

IRRITABILITY, in Plants: term designating phenomena very interesting and curious, but very little understood. Such are the phenomena of what is usually called the *Sleep* (q.v.) of plants; the motion of the Spores (q.v.) of many cryptogamic plants by means of cilia; the motions of *Oscillatoria*, *Diatomaceæ*, and others of the lowest *Algæ*; the successive approaches of the stamens of *Parnassia palustris* to the pistil; the movements of the leaves of the *Moving Plant* (q.v.), of India; and those caused by agitation or by the touch of a foreign body in the leaves of *Sensitive Plants* (q.v.), of the *Dionæa* or Venus's Fly-trap, etc., in the stamens of the Barberry, *Schizanthus*, etc., and in the stigmas of *Mimulus*, etc. Many explanations have been proposed of these phenomena, but none satisfactory. Of the existence of anything analogous to the nervous system of animals, which has been imagined, there is not the slightest proof, closely as some of the phenomena resemble those of animal life. The explanations proposed are mere guesses: see **MUSCLES**.

IRRITABLE, **IRRITABILITY**, etc.: see under **IRRITATE**.

IRRITANT, a. *ir'ri-tănt* [L. *irritus*, not ratified or settled—from *in*, not; *rātus*, ratified]: in *Scotch law*, rendering null and void, as an *irritant* clause: see under **IRRITATE**. *Irritaney* in *Scotch law* corresponds to forfeiture in *English law*.

IRRITATE, v. *ir'ri-tăt* [L. *irritātus*, snarled often or greatly, as dogs, provoked—from L. *hīrrirē*, to snarl: Norw. *hīrra*, to snarl, to incite: Ger. *zerren*; Dut. *ritsen*, to provoke to anger]: to make angry or fretful; to provoke or

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exasperate; to inflame or excite heat in, as the flesh or skin. IR'RITATING, imp.: ADJ. exciting; causing irritation. IR'RITATED, pp.: ADJ. excited; exasperated. IR'RITABLE, a. -tū-bl [F. *irritable*—from L. *irritabilis*, easily excited to anger]: easily provoked or made angry. IR'RITABLY, ad. -bli. IR'RITABILITY, n. -bīl'ì-tì [F. *irritabilité*]: the quality of being easily excited or provoked; the peculiar susceptibility possessed by the living tissues and fibres on the application of certain substances. IR'RITANCY, n. -tān-sī, the state of being irritant. IRRITANT, a. *ir'ri-tānt* [L. *irritans*, exasperating]: irritating: N. that which irritates or causes pain, heat, or tension; in *medicine*, a substance or an application, producing irritation in the skin or mucous membrane. Heat, light, and electricity, are irritants under certain circumstances; but sometimes more properly stimulants. IR'RITA'TION, n. -tā'shūn [F.—L.]: the act of exciting heat or redness in the skin; the heat so produced; excitement of anger or passion; provocation; anger. IR'RITA'TIVE, a. -tīv, tending to excite or irritate. IR'RITA'TORY, a. -tū'tēr-ī, exciting; producing irritation.—SYN. of 'irritate': to excite; inflame; fret; provoke; tease; exasperate; vex; enrage; incense; anger; stimulate; in *OE.*, to agitate; heighten.

IRRITA'TION: any morbid excitement of the vital actions not amounting to inflammation; often, but not always a cause of inflammation. In cases of I. remarkable sympathetic symptoms are often observed: thus, I. of a calculus occasions intense sickness and vomiting. But of all sources of sympathetic morbid affections of this class, I. of the stomach and intestines is the most frequent and the most important. The ordinary sick headache is the most usual form of this sympathetic affection; but in certain morbid conditions, and especially in the puerperal state, the symptoms may closely resemble those of acute inflammation of the peritoneum, the heart, the pleura, or the membranes of the brain. It is to Dr. Marshall Hall mainly that the credit is due of pointing out those cases in which I. so closely resembles inflammation. He has shown that blood-letting affords a certain means of diagnosis in these cases. In true inflammation, 30 or 40 ounces of blood may be taken before there are any symptoms of faintness; while in I. the loss of a very few ounces (nine or ten) of blood will cause the most decided syncope.

IRRUPTION, n. *ir-rūp'shūn* [F. *irruption*—from L. *irruptiōnem*: L. *irruptus*, burst or rushed violently into—from *in*, into; *rumpērē*, to break or burst]: a sudden or violent bursting in, as of the sea; a sudden invasion or incursion, as of an enemy. IRRUP'TIVE, a. -tīv, rushing suddenly in or upon. IRRUP'TIVELY, ad. -lī.—SYN. of 'irruption': inroad; incursion; invasion; intrusion; a burst; a rush.

IRTISH, *ir'tish*: river of Siberia, affluent of the Obi (q.v.).

IRVINE, *er'vīn*: royal and parliamentary burgh, seaport, and market-town of the county of Ayr, Scotland: on

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both banks, but principally on an eminence on the right bank of the river Irvine, here crossed by a handsome stone bridge, about a mile above the embouchure of the river in the Firth of Clyde. It is 11 m. n. of Ayr, 29 m. s.w. of Glasgow by railway. The harbor has now become so shoal with sand, as to admit vessels not exceeding 100 tons burden. The 'Academy' is one of the most flourishing educational institutions in w. Scotland. Ship-building and the manufacture of book-muslins, jaconets, and checks, are among the branches of industry. The shipping trade for vessels under 100 tons burden is considerable. Pop. of parliamentary burgh (1871) 6,866; (1881) 8,503.

IRVINE, *ér'ven*, WILLIAM: 1741, Nov. 3—1804, July 29; b. Fermagh, Ireland: soldier. He graduated at Dublin Univ., studied medicine, served as surgeon on a British man-of-war in the war with France 1756–63, settled in Carlisle, Penn., 1764, was a member of the provincial convention at Philadelphia 1774, appointed by congress col. of the 6th Penn. regt. 1776; taken prisoner at Three Rivers, Canada, the same year; member of the court-martial that tried Gen. Charles Lee 1778, promoted brig.gen. 1779, and in command of the troops on the w. frontier 1782,3. He was a member of congress 1786–88 and 1793–95, commander of Penn. militia in the whiskey insurrection 1794, supt. of military stores at Philadelphia 1801, and pres. of the Penn. Soc. of the Cincinnati at his death.

IRVING, *ér'vīng*, EDWARD: 1792, Aug. 15—1834, Dec. 8; b. Annan, Dumfriesshire: minister of the Scotch Church. He studied at the Univ. of Edinburgh, and after completing his curriculum for the ministry, became assistant (1819) to Dr. Chalmers, then a minister in Glasgow. His sermons were not very popular. Chalmers himself was not satisfied with I.'s descriptive and rhetorical pulpit style. In 1822, I. received a call to the Caledonian Church, Hatton Garden, London, which he accepted. His success as a preacher in the metropolis was such as had never previously been witnessed. After some years, however, the world of fashion got tired of I.; but it was not till his more striking singularities of opinion were developed that fashion finally deserted him. At the close of 1825, he began to announce his convictions in regard to the second personal advent of the Lord Jesus, in which he had become a firm believer, and which he declared to be near at hand. This was followed by the translation of a Spanish work, *The Coming of the Messiah in Majesty and Glory*, by Juan Josafat Ben Erza, professedly written by a Christian Jew, but in reality the composition of a Spanish Jesuit. I.'s introductory preface is regarded as one of his most remarkable literary performances. In 1828 appeared his *Homilies on the Sacraments*. He now began to elaborate his views of the incarnation of Christ, asserting with great emphasis the doctrine of his oneness with us in all the attributes of humanity. The language which he held on this subject drew upon him the accusation of heresy; he was charged with maintaining the sinfulness of Christ's nature, but he paid little heed to the

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alarm thus created. He was now deep in the study of the prophecies; and when the news came to London early in 1830, of certain manifestations of prophetic power in W. Scotland (see IRVINGITES), I. was prepared to believe them. Harassed, worn, battled in his most sacred desires for the regeneration of the great Babylon in which he dwelt, branded by the religious public, and satirized by the press, the great preacher, who strove above all things to be faithful to what seemed to him the truth of God, grasped at the new wonder with a passionate earnestness. Matters soon came to a crisis. I. was arraigned before the presbytery of London 1830. and convicted of heresy; ejected from his new church in Regent's Square 1832; and finally deposed 1833. by the presbytery of Annan, which had licensed him. His defense of himself on this last occasion was one of his most splendid and sublime efforts of oratory. The majority of his congregation adhered to him, and gradually a new form of Christianity was developed, commonly known as Irvingism, though I. had really little to do with its development. Shortly afterward his health failed, and in obedience, as he believed, to the Spirit of God, he went to Scotland, and died of consumption, at Glasgow. I. had all the natural gifts of a great orator; a comprehensive though not a clear or keen intellect; a temperament of poetic melancholy; an unfortunate love of the gorgeous and magnificent, especially in religious ritual; a continual craving for excitement; an intense moral earnestness, mingled with strong esteem of his own powers and his own mission; a zeal apostolic in its fervor but pouring itself through narrow channels; and a natural predilection for the marvellous which betrayed him into a fanatical spiritualistic dealing with Christian truths and facts.—See Carlyle's *Miscellaneous Essays*, and his *Reminiscences*; Mrs. Oliphant's *Life of Edward Irving* (London. (1862); Coleridge's *Notes on English Divines*; Hazlitt's *Spirit of the Age*.

IRVING, *ér'vìng*, Sir JOHN HENRY BRODRIBB: actor: b. Keinton, Somersetshire, England, 1838, Feb. 6. He received a private school education, entered the office of an East India merchant in London 1852, studied elocution and made his first appearance on the stage at the Lyceum Theatre, Sunderland, England, as *Richelieu*, 1856, Sep. 29. In 1857 he went to the Theatre Royal, Edinburgh, where he remained 2½ years, playing with the leading actors of the day, and closing his engagement with his first performance of *Claude Melnotte*. In 1860 he played in Glasgow, then till 1865, Apr., in Manchester, part of 1866 in Liverpool and the remainder with Ellen Terry in Manchester, and 1867 filled his first London engagement at the St. James's Theatre as *Daricourt* in the 'The Belle's Stratagem.' In 1870 he appeared as *Digby Grant* in the comedy of the 'Two Roses' in the Vaudeville, London, for 300 consecutive nights, 1874, and Oct. 31, gave his first representation of *Hamlet* at the Lyceum Theatre, London. This ran 200 nights, and was followed by *Macbeth* 1875, *Othello* 1876, and *Richard III.* 1877. He opened the Lyceum Theatre, under his own management, 1878, Dec. 30, with *Hamlet*, and

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has since retained control of the house and its company. In 1881, May, he produced 'Othello' in which he alternated the parts of the Moor and *Iago* with Edwin Booth; 1883 was given a public banquet in London prior to his departure with his company for a tour of the United States; 1884 made a second tour of the United States and addressed the students of Harvard Univ. on *The Art of Acting* (which was repeated at Oxford Univ. 1886, June 26); 1886 with Miss Terry made a third tour of the United States; and 1887-8 his fourth; 1889, Sept. 28 he revived in his own theatre, *The Dead Heart*, which had not been played in 25 years. He has published *Impressions of America* (1884); lectured before the Church of England Temperance Soc. on *Amusements*, defending the morality of the stage; received numerous decorations and other acknowledgments of his rare dramatic powers; and is permanent gov. of the council of the Shakespeare Memorial Association.

IRVING, WASHINGTON, LL.D.: 1783, April, 3—1859, Nov. 28; b. New York; youngest son of William I., who had emigrated from Scotland, and settled in New York as a merchant before the Revolution. Washington I., at the age of 16, entered a law office; but he profited largely by his father's well-stocked library, Chaucer and Spenser being his favorite authors. New York, at this period, was a town of about 50,000 inhabitants, many of whom were descendants of the original Dutch settlers, having quaint manners and customs, of which I. was a curious observer. In 1804, with the excuse of a tendency to pulmonary disease, he visited, and travelled extensively in Europe; returned to New York 1807, and contributed a series of genial and humorous essays to a periodical called *Salmagundi*, with whose editorship and publication his elder brother, William I., was connected, being associated with James K. Paulding. In 1809, he wrote *A History of New York, from the Beginning of the World to the End of the Dutch Dynasty*, by *Diedrick Knickerbocker*, a burlesque chronicle written in so quiet a vein of humor, that it has sometimes been taken for a veritable history. It is the most American of his works, and shows the most of original power.

Having no inclination for law, he engaged in commerce with his brothers as a silent partner, but gave his time to literature, and in 1813, edited the *Analectic Magazine*, in Philadelphia. At the close of the war 1815, he visited England, where he was warmly welcomed by Campbell, whose biography he had written, and was introduced by him to Walter Scott. While he was enjoying his English visit, his commercial house, which had a branch at Liverpool, failed, and he was suddenly reduced to poverty, and the necessity of writing for his bread. The *Sketch-book*, portions of which had appeared in New York, was offered to Murray, and afterward to Constable, but was refused by both of these celebrated publishers. After an unsuccessful attempt of the author to publish it on his own account, Murray, on Walter Scott's recommendation, took the *Sketch-book*, paying £200 for the copyright, which he after-

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ward increased to £400. It had a charm in its beauty and freshness, and was a surprise as the work of an American, and was therefore received with great favor. I. went to Paris, and, 1822, wrote *Bracebridge Hall*, and 1824 the *Tales of a Traveller*. He then spent much time at Madrid, translating documents connected with the life of Columbus. With these materials he wrote *History of the Life and Voyages of Columbus* (1828); *Voyages of the Companions of Columbus*; *The Conquest of Granada*; *The Alhambra* (1832), a portion of which was written in the ancient palace of the Moorish kings; *Legends of the Conquest of Spain* (1835); and *Mahomet and his Successors* (1849). In 1829, I. returned to England as sec. to the U. S. legation. In 1831, he received the honorary degree LL.D. from the Univ. of Oxford; and next year returned to America, where he was received with great enthusiasm, and found honors of all kinds awaiting him. A visit to the Rocky Mountains produced his *Tour on the Prairies*. He contributed sketches of Abbotsford and Newstead Abbey to the *Crayon Miscellany*, and from the papers of John Jacob Astor, wrote *Astoria* (1837), and the *Adventures of Captain Bonneville*; also a series of stories and essays in the *Knickerbocker Magazine*, collected under the title of *Wolfert's Roost*. In 1842, he was appointed U. S. minister to Spain. In 1846 was published his *Life of Goldsmith*; and his *Life of Washington*, 1855-59: the last was intended as his great work, but did not afford the material needed for his poetical genius, and it therefore lacks the brilliancy and interest which we naturally associate with I.'s name. I. was the first great ornament of American literature who became known on the other side of the sea. His works show no profound original research, but their artistic execution is faultless. Indeed, I. is a classic as regards literary style. He is refined, clear, vivid, apt, and delicate; with a deliciously quaint humor, and a broad and rich human sympathy. His style has been called the reflection of his own moral nature; which was exquisite in courtesy and fidelity, and of lofty purity in all social relations. He never married, having held sacred the memory of an early love which death had blighted. An ed. of his works, 15 vols., reached a sale of 250,000 vols. He spent the last years of his life at Sunnyside, in his own 'Sleepy Hollow,' on the banks of the Hudson, near Tarrytown, with his nieces; and there he died suddenly of heart-disease. See the *Life* by his nephew, Pierre I. (5 vols. New York 1861-67).

IRVINGITES, *er'ving-its*: usual but improper designation of a small body of Christians who object to any designation which implies sectarianism, and therefore use no other name than the *Catholic Apostolic Church*. In the winter of 1829-30, the Rev. Edward Irving (q.v.), then a minister of the Scotch (Presb.) Church, Regent Square, London, delivered a series of lectures on spiritual gifts, in which he maintained that those which we are in the habit of calling 'extraordinary' or 'miraculous' were not meant to be confined to the primitive church, but to be continued through the whole present dispensation. About

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the same time, as if to confirm the views of the great preacher, there occurred at Port-Glasgow, in w. Scotland, certain strange phenomena. It was alleged that miraculous acts of healing had been done, and that the apostolic gift of tongues had reappeared. After what was deemed a sufficient investigation on the part of some members of Mr. Irving's church, it was concluded that the manifestations of spiritual power were genuine. Similar manifestations soon occurred in his own church, which also were pronounced genuine. They were held to be of two kinds: 1st, speaking in tongues; 2d, prophesying. As the former bore no resemblance to any language with which men were conversant, it was believed to be strictly an 'unknown tongue,' the Holy Ghost 'using the tongue of man in a manner which neither his own intellect could dictate, nor that of any other man comprehend.' The latter, 'prophesying,' consisted chiefly of 'exhortations to holiness, interpretations of Scripture, openings of prophecy, and explanations of symbols.' After some time, Irving was deposed from his office for heresy by the Church of Scotland; and in the following year he died; but meanwhile the religious opinions with which his name is associated had been assuming a more definite and ecclesiastical shape. The final result was the *Apostolic Catholic Church*, the constitution of which is briefly as follows:

There are, as in the apostolic times, *four* ministries; 1st, that of 'Apostle;' 2d, that of 'Prophet;' 3d, that of 'Evangelist;' 4th, that of 'Pastor.' The apostles are invested with spiritual prerogatives; they alone can minister the Holy Spirit by the laying on of hands; to them the mysteries of God are revealed and through them unfolded to the church; and they decide on matters of order and discipline. Nothing that transpires in any church in the way of 'prophetic utterance' can be authoritatively explained save by them; and the various 'angels of the churches' are bound to bring all such utterances under their cognizance, in order that they may be rightly interpreted. The function of the 'prophet' has been above indicated. The work of an 'evangelist' consists mainly in endeavoring to 'bring in' those who are without. The 'angel' of the Catholic Apostolic Church corresponds with the bishop of other Christian denominations. The ministers of each full congregation comprise an angel, with a fourfold ministry (consisting of elders, prophets, evangelists, and pastors), and a ministry of deacons in charge of temporal matters. This ministry is supported by tithes, the people giving a tenth of their income for the support of the priesthood. Church affairs are managed by a council of ministers of all classes, whose selection and arrangement are conceived to have been foreshadowed in the structure of the Mosaic Tabernacle.

The Catholic Apostolic Church does not differ from other Christian bodies in regard to the common doctrines of the Christian religion; it only accepts, in what it considers to be a fuller and more real sense, the *phenomena* of Christian life. It believes that the wonder, mystery, and

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miracle of the apostolic times were not accidental, but are essential to the divinely instituted church of God, and its main function is to prepare a people for the second advent of Christ. A very special feature of the Catholic Apostolic Church is its extensive and elaborate symbolism. In regard to the Lord's Supper, the doctrine of the objective presence is held, but both transubstantiation and consubstantiation are repudiated.

The Catholic Apostolic Church has established itself in England, Scotland, Canada, the United States, Prussia, France, Switzerland, Ireland, Belgium, Russia, Denmark, Sweden, Australia, and India. Nowhere has it gained many adherents, nor is it known to be increasing. Its churches in the United States number about 10; ministers, about 30, among which are some men of unusual mental gifts and Christian excellence.

IRWIN, *ēr'wīn*, JARED: 1750–1818, Mar. 1; b. Mecklenburg co., N. C.: statesman. He removed to Burke co., Ga., when a boy; served in a Ga. regt. the greater part of the Revolutionary war, and afterward in a campaign against the Creek Indians; was a member of the first legislature of Ga. after the war, and served from 1790 till 1811 excepting when gov. 1796–98 and 1806–9, being in both branches and several times pres. of the senate; was a member of the state constitutional conventions 1789, 95, and (pres.) 96; and during his first term as gov. signed the act repealing the famous 'Yazoo law,' which had been enacted by a previous legislature through corrupt means.

IS, v. *iz* [AS. *is*; Ger. *ist*; L. *est*; Gr. *esti*; Skr. *asti*]: 3d pers. sing. pres. of the verb *be*.

ISAAC, *ī'zak* [Heb. 'he laughs']: Hebrew patriarch and pastoral chief: son of Abraham and Sarah, and half-brother of Ishmael; born when both his parents were advanced in age.—I.'s character has been differently interpreted. What has been generally deemed his mild and gentle disposition and simple pastoral piety, a few have termed weakness. He certainly lacked the energy and enterprise of his father, the calculating wisdom of his son Jacob, and the impulsive self-assertion of his son Esau; but his blameless unobtrusive ways draw our sympathy and esteem. He was unwise in his dealings with his two sons—showing partiality. He was upright; and by successful agriculture became rich in flocks and herds. He died at Hebron, aged 180 years, leaving two sons, Jacob and Esau. The Midrash ascribes to him, in allusion to Gen. xxiv. 63, the institution of the afternoon prayer.

ISAAC I., COMNENUS, Roman Emperor of Constantinople; first of the family of the Comneni who attained that dignity: son of Manuel C., an officer; d. 1061 (reigned 1057–59). His father Manuel, his brother John, and himself were employed in important military and civil capacities by Basil II. (976–1025); but during the reign of the latter's imbecile and tyrannical successors, in whose eyes it was criminal for any one to excel in wisdom and ability, I. was exposed to considerable danger. Such, however,

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was his prudence, and the affection of the people for him, that the emperors unwillingly suffered him to live unmolested; and on the deposition of Michael VI. (reigned 1056-57), I. was elevated to the vacant throne. On his accession, he found the affairs of the empire in what had become their usual condition; rebellion within, aggression without, and the treasury exhausted. He succeeded in establishing a system of great economy in all branches of administration, and still further to lighten the taxes on the people, he called on the clergy to contribute their share. The clergy refused, and the patriarch Michael is reported to have even threatened him with deposition; but the clergy were compelled to submit. In 1059, he repelled the Hungarians, who had encroached on his possessions in the n. w.; but soon afterward, to the great grief of his subjects, he was attacked by a violent fever, and believing his dissolution approaching, appointed his famous general, Constantine Ducas, as his successor. I., however, recovered from his illness, but not claiming the crown, retired to a convent, where he lived two years and died in the odor of sanctity. He was one of the most virtuous emperors of the East, and to learning, wisdom, and prudence, united an administrative ability and energy that would, had his reign been longer, have tended to regenerate the effete Byzantine empire. Literary works by I., extant, are Scholia—hitherto unedited—on Homer, his favorite author; further, a work, *Characteristics*, scil., of the Greek and Trojan chiefs mentioned in the *Iliad*; and a treatise *On the Works of Homer*.

ISABEL-COLOR, n. *iz'a-běl kŭl'ér* [generally referred to Isabelle of Austria, daughter of Philip II. of Spain and wife of Archduke Albert of Austria, who, 1601, made a vow not to change her linen until her husband had taken Ostend, which he was besieging; the town, however, was not taken until 1604, by which time her linen had assumed a dingy hue]: pale brownish-yellow color; dull yellow.

ISABELLA, *iz-a-bèl'a*, of Castile, Queen of Spain: 1451, Apr. 23—1504, Nov. 24 (reigned 1474-1504); daughter of John II., King of Castile and Leon; thus a descendant of the famous John of Gaunt, Duke of Lancaster. In 1469, she married Ferdinand V., surnamed 'the Catholic,' king of Aragon. On the death of her brother, Henry IV., she ascended the throne of Castile and Leon, to the exclusion of her elder sister Joanna. She had won the support of great part of the states of the kingdom during her brother's life, and the victorious arms of her husband compelled the consent of the rest (see FERDINAND). I. was a woman of remarkable energy and talent, and possessed beauty and much winning grace, though proud, ambitious, and deficient in true womanly gentleness. She was always present in meetings of council, and insisted on the use of her name with that of Ferdinand in all public documents. Her name is honorably associated with that of Columbus, whose adventurous scheme for discovery of the new world she favored and aided when all around her were discrediting it. She died

ISABELLA II.

at Medina del Campo, after having exacted from her husband, of whom she was always jealous, a promise, confirmed by oath, never to marry again.

ISABELLA II. (MARIA ISABEL LUISA), Ex Queen of Spain: b. Madrid, 1830, Oct. 10 (reigned 1833-68); elder daughter of Ferdinand VII. by his fourth wife, Maria Christina, of the Two Sicilies. By a decree which set aside the Salic law in Spain, and was confirmed by the Cortes, 1830, I. became heiress-apparent to the throne, which she ascended on the death of her father, her mother being appointed queen-regent. An insurrection in favor of her uncle, Don Carlos (q.v.), who, according to the Salic law, would have succeeded to the throne, immediately broke out in the n.e. provinces, and raged with great violence seven years, but was ultimately suppressed by the aid of Britain, France, and Portugal. During this tumultuous epoch, effective internal administration was impossible, and it was necessary to conciliate as far as possible all parties, in order to prevent desertions to the Carlists. Before the revolt had been crushed (in 1839), politicians had begun to divide into two classes, *Moderados*, or 'conservatives,' and *Exaltados*, or 'liberals;' and though the queen-regent sided with the former party, she found it necessary to enlarge the liberal constitution of 1834, and ultimately (1837) to re-establish the constitution of 1812. The attempts of the Moderados 1839 to inaugurate a more narrow policy failed, and Maria Christina was forced to flee to France, leaving the regency and the care of the young queen to Espartero (q.v.). In 1843, the queen was declared by the Cortes to have attained her majority; and this was soon followed by the return of the queen-mother, the military dictatorship of Narvaez, and an anti-liberal policy. The question known as the 'Spanish Marriages,' which at that time agitated the different courts of Europe, was settled by French influence, the queen marrying her cousin, Don Francisco d'Assisi, eldest son of Ferdinand VII.'s youngest brother (1846); while her sister, Maria Ferdinand Luisa, espoused the Duke of Montpensier, fifth son of Louis Philippe. This marriage of the queen, based wholly on the political interests of the party in power, has been fruitful of domestic annoyances, estrangements, and reconciliations rapidly succeeding one another. After eight years of authority, during which he had repressed all liberalism with an iron hand, and foiled the intrigues both of the Carlists and the king-consort, Narvaez gave place to Murillo (1851), who began by promising liberal reforms, and agreed to a concordat with the pope. A change to almost purely absolute government 1853, was followed by the banishment of many chiefs of the constitutional party, and a formidable rising of the army took place. The queen mother fled to France, and Espartero was once more put at the head of an administration in which liberal principles held sway. But the queen disapproving of his policy, he resigned in favor of O'Donnell, 1856, who was soon afterward supplanted by Narvaez; and

ISABELLA—ISABNORMAL.

the latter, in turn, had to make way for a liberal government, 1857. In 1858, O'Donnell was restored to power, and with the exception of a brief interval (1865, June), in which Narvaez was pres. of the council, maintained himself in the premiership till his death, 1867. The chief foreign events of I.'s reign were—repeated negotiations of the United States with Spain, with the view of purchasing the island of Cuba; the rectification of the Pyrenean frontier; the successful war with Morocco (q.v.); the annexation and subsequent evacuation of San Domingo (see



Order of Isabella
the Catholic.

HAYTI); and the discreditable quarrels with the republics of Chili and Peru. The nation became more and more impatient under the despotic rule of the last years of I.'s reign; and at length, 1868, Sep., a revolution broke out, which ended in the formation of a Republican provisional government, and the flight of I. to France. In 1870, she renounced her claim to the throne in favor of her son, Alfonso (chosen king 1874). She returned to Spain 1878.

ISABEL'LA OF ENGLAND: see EDWARD II: EDWARD III.

ISABEL'LA THE CATH'OLIC, ORDER OF: Spanish order of knighthood, founded by Ferdinand VII., 1815, as a reward of loyalty, and for defense of the possessions of Spanish America. It is now conferred for all kinds of merit. The sovereign is the head of the order, which is divided into the three classes of Grand Crosses, Commanders, and Knights.

ISABELLINE-BEAR, n. *iz-a-bēl'lin-*: in zool., *Ursus isabellinus*: lighter variety of the Syrian bear. It is of a yellowish brown color, but varies according to the season of the year; found in the Himalaya Mountains, and feeds chiefly on vegetables; called also the Indian White Bear.

ISABEY, *ē-zā-bā'*, JEAN BAPTISTE: 1767, Apr. 11—1855, Apr. 18; b. Nancy, France: portrait painter. He studied painting with David with the intention of applying himself to historical work, but began his art career with crayon portraits, and achieved a wide renown as a miniature painter. His painting of Napoleon I. reviewing his troops in the court of the Tuilleries won the friendship of the emperor and the appointment of court-painter. The chief personages of France and of Europe sat to him. Beside a large number of portraits, he painted two notable historical and portrait-group works: the *Tableau des Marechaux* (Napoleon and his principal generals), and the *Conference at Vienna* after Napoleon's abdication.—His son, LOUIS GABRIEL I. (1804–86), was an eminent painter of marine views.

ISABNORMAL: see ISOTHERMAL LINES,

ISAGOGIC—ISAIAH.

ISAGOGIC, a. *ī'sā-gōj'ik*, or ISAGOG'ICAL, n. *ī-kāl* [Gr. *eisāgōgikōos*, introductory—from *eis*, into; *āgō*, I lead]: introductory; belonging to an introduction.

ISAGON, n. *ī'sā-gōn* [Gr. *īśōs*, equal; *gōnīā*, an angle]: a figure whose angles are equal.

ISAIAH, *ī-zā'yā* [Heb. *Yeshayahu*, 'Salvation of Jehovah']: grandest and most sublime of the Hebrew prophets: son of one Amoz. He uttered his oracles in the reigns of Uzziah, Jotham, Ahaz, and Hezekiah, kings of Judah. Regarding his outward life, almost nothing is known. He appears to have resided at Jerusalem, in the vicinity of the temple; was married, and had three sons, given him, he says, 'for signs and for wonders in Israel.' The period of his death is not known, but according to a rabbinical legend, he was sawn asunder by order of King Manasseh, who abhorred his oracles (cf. Jos. Ant. x. 31). If this statement is well founded, I. must have been nearly 100 years old when he was thus murdered.—The prophecies of I., viewed in their literary aspect, consist of a series of 'visions' beheld at different times, and arranged neither exactly in chronological nor in material order. It is believed by many that some other than I. compiled or edited the whole book; and probably a majority of scholars of note see signs of a later hand in some fragmentary passages here and there which they consider additions by some compiler (e.g. xxxvii. 38).—The grand controversy, however, is not concerning the arrangement or compiling of these prophecies, but concerning their authorship. Did they all proceed from the same person, or are different authors discernable? Orthodox critics maintain the unity of authorship, and assert that even if a later editor were proved, I. certainly wrote the whole 66 chapters. The first who doubted this was the German scholar Koppe (1779) who suspected that the last 27 chapters (xl.–lxvi.) were the work of a later hand. He was followed by Döderlein, Eichhorn, and Justi, and the same view has been substantially adopted by Paulus, Bertholdt, De Wette, Gesenius, Hitzig, Knobel, Umbreit, and Ewald. The chief arguments for a 'Deutero-Isaiah' (a second I.) i.e. for the last part of the book, are: 1. That the subject-matter of these 'burdens,' chaps. xl.–lxvi, relates to what happened long (at least 100 years) after I.'s death, viz., the redemption of the Jews from captivity, consequent on the overthrow of the Babylonian monarchy by the Medo-Persian army. 2. That the writer speaks of the exile as something present, and of the desolation of Judah as having already taken place. 3. That Cyrus is mentioned by name, and an intimate knowledge exhibited of his career. 4. That an extraordinarily minute acquaintance with the condition and habits of the exiles is shown. 5. That the sentiments are far more spiritual than in the earlier chapters. 6. That the style is totally different, being more smooth, flowing, rhetorical, and clear. To these objections Hengstenberg, Hävernicks, Keil, Hendersen, Jahn, Möller, Alexander, and others have replied

ISAR—ISAURIA.

It is pointed out that the above arguments 1-4, amount simply to a *denial of the possibility of prediction of future events by Divine revelation*. If these arguments prove that the writer must have been an eye-witness of the captivity or the exile, or else have written after those events, then they prove equally that he must have lived at the time of the crucifixion of Christ, or after it, since he pictures his humiliation, desertion by his people, sufferings and death with a particularity equal to that in his depicting of the exile of the Jewish people. Arguments 5, 6, are met with the averment that in the earlier chapters are found the germs of the chief things in the later chapters, and that the later show only the natural rise in fullness and sublimity as the scope of the prophecy broadens. Attention is called to the fact also that in all history or tradition concerning the Hebrew canon, no hint is found of an addition to Isaiah's prophecy, or of any change; while the 27 chapters are too remarkable to have been added without some faint trace of such an act; likewise to the fact that in the Septuagint translation (abt. B.C. 250) Isaiah's prophecy comprises the whole 66 chapters. Moreover, the fact is noted that the New Testament writers quote from Isaiah portions of the last 27 chapters: e.g. in Lk. iv. 18, from Is. lxi. 1; in Acts viii. 32, from Is. liii. 7; in Jn. xii. 38, and in Rom. x. 16, from Is. liii. 1; in Rom. x. 21, from Is. lxv. 2.—This question is of much historical and linguistic interest; but even if it were possible to decide it in denial of Isaiah's authorship, the decision would in no wise invalidate the inspiration and authority of this prophetic book as a whole.

Among the many commentators on I. are Jerome, Vitringa, Calvin, Lowth, Henderson, Calmet, Hitzig, Rosenmüller, Gesenius, Delitzsch, Hengstenberg, Alexander, and T. K. Cheyne (1880).

ISAR, *ē'zēr*, or ISER: river of Germany, rising in the Tyrol, n. of Innsbruck, entering Bavaria, then flowing generally n. and n.e., and joining the Danube at Degendorf, after a course of about 180 m. Munich and Landshut are on its banks. In the first part of its course, it is an impetuous mountain torrent; and even after it leaves the Alps, it has many rapids and islands, but for much of its course it is navigable for boats. Much wood is floated down the I. from the mountains.

ISATINE, or ISATIN, n. *ī'sā-tīn* [Gr. *isatis*, woad]: a yellow coloring matter derivable from indigo in the form of deep yellowish-red prismatic crystals. ISATIS, n. *ī sā'tīs*, the woad, a tall plant with a yellow flower yielding a blue dye; the *Isātis tinctoriā*, ord. *Cruciferae*.

ISAURIA, *ī saw'rī-a*: ancient district in Asia Minor, bounded n. by Phrygia, e. by Lycaonia, s. by Cilicia, and comprising a barren upland plain with mountains in the s. The district is supposed to have contained but few towns, chief of which was Isaura, the capital, which was rebuilt by Amyntas. Extensive ruins, consisting of a massive wall with hexagonal towers, a triumphal arch, and tombs,

ISCANDERÛN—ISCHIATIC.

are still seen near the town of Hajilar, 45 m. w. of Karaman. The people, believed to have been a daring lawless race, owing allegiance to either the Persian or Macedonian monarchy, appear in history as having been driven to their mountain strongholds and forced to submission by the pro-consul P. Servilius; as giving the Roman empire so much trouble that it was decided to leave them alone; as being a second time subjugated in the reign of Justinian; and as giving two occupants to the Byzantine throne. Zeno, 474-495, and Leo III., 717-741.

ISCANDERÛN, *is-kân-dê-rôn'*, or SCANDEROON, *skân-dê-rôn'* or ALEXANDRETTA, *âl-ëks-ân-drèt'a*: seaport of Asiatic Turkey, on the coast of Syria, on the gulf of I. 60 m. w.n.w. of Aleppo, of which it is the port. Its harbor is the best on the Syrian coast; but the town itself, though much improved within late years, is poor and miserable. I. is at the extreme north of the Syrian coast where that coast forms an angle with the coast of Asia Minor; and it would be the natural port of a 'Euphrates railway.' Numerous vessels of large tonnage, and with cargoes of much value, annually enter and clear the port. Galls, silk, cotton, and fruits are exported; and the chief imports are rice, corn, salt, and goods of British manufacture. Pop. 1,000.

ISCHÆMIA, n. *is-kê'mî-a* [Gr. *ischaimos*, stanching blood; *ischō*, I hold, check, or curb; *haima*, blood]: an affection of the disks of the eye caused by distension of the opthalmic veins, as in meningitis and hydrocephalus.

ISCHIA, *is'kê-â* (ancient *Ænaria*): island between the Bay of Naples and the Bay of Gaeta; about 37 sq. m. Pop. 28,000. I. is a favorite summer resort, and is noted for the excellence of its mineral waters, and numerous springs, great richness of soil, exquisite flavor of its fruits and wines, and enchanting scenery. Its highest point is the volcanic Monte Epomeo, 2,574 ft. above sea-level, of which the eruptions have been disastrous; especially that of 1302. The Lake of I. occupies an extinct crater of the volcano. and abounds in fish. Casamicciola (pop. 4,000, but crowded from May to Sep., when its climate is delicious, by summer visitors) is the largest town, others being Borgo d'Ischia, Forio, and Lacco Ameno. In 1881, Casamicciola was nearly destroyed by two earthquake shocks. A still more dreadful catastrophe befel it 1883, Sep. 28, when the town was utterly overwhelmed, only four or five buildings being left standing. Four or five thousand persons lost their lives, very many being the sojourners in the numerous hotels. Some scientists affirm that the cause of the ruin was not so much an earthquake, as the subsidence of the surface of the ground caused by continuous wearing away of the subsoil by the hot subterraneous springs.

ISCHIATIC, a. *is'kî-ăt'ik* [Gr. *ischion*, the hip]: pertaining to the hip. ISCHIAGRA, n. *is-kî-ăg'ra* [Gr. *ischion*, the hip joint; *agra*, hunting, catching, seizure]: in *path.*, gout in the hip-joint; sciatica. ISCHIUM, n. *is'kî-ûm*, the hip-bone.

ISCHL—ISÈRE.

ISCHL, *ish'ł*: small town of Upper Austria, surrounded on all sides by gardens; finely situated on the river Traun, amid magnificent Alpine scenery, 28 m. e.s.e of Salzburg. It is the chief town of the district called the Salzkammergut (q.v.). Much salt is manufactured here. The situation of I., and the salt baths established here 1822, have attracted vast numbers of visitors. The emperor and many of the Austrian nobility have villas here, and the town is notable as the scene of various diplomatic conferences. Pop. (1890) 2,272.

ISCHURY, n. *is'kū-rĭ*, or **ISCHURIA**, n. *-kū'rĭ-ă* [Gr. *ischo*, I stop or retain; *ouron*, urine]: the suppression or stoppage of urine. **IS'CHURETIC**, n. *-rét'ik*, a medicine adapted to relieve ischury: **ADJ.** having the quality of relieving ischury.

ISCHYPTERUS, n. *is-kĭp'tér-ŭs* [Gr. *ischus*, strength of body; *pteron*, a fin]: in *geol.*, a genus of ganoid fishes with smooth rhomboidal scales.

ISCHYROMYIDÆ, n. *is-kĭr-ō-mĭ'ĭ-dē* [Gr. *ischuros*, strong; *mus*, a mouse]: in *paleon.*, family of *Rodentia*, containing only one species, the Ischyromis. It resembles the musk-rat, but has closer affinity to the squirrels, and certain resemblances to the beaver.

ISEO, *ē-sā'ō*, **LAKE**, or **LACUS SEVINUS**, *lā'kūs sē-vĭ'nŭs*: lake of n. Italy, between the provinces of Bergamo and Brescia; extreme length n. to s. about 20 m.; average breadth, 6 m.; greatest depth, 984 ft. On its banks is the town of Iseo. The lake is fed by the rivers Oglio and Borlazzo. The surrounding scenery is very interesting, broken into picturesque heights, and studded with fine villas, vineyards, and olive-gardens.

ISÈRE, *ē-zār'*: river of the s.e. of France, rising in Savoy at the w. base of Mount Iseran, flowing generally s.w. through Savoy, and through the dept. of Isère and Drome, and joining the Rhone 8 m. above Valence. Its entire length is about 190 m., for the last fifty of which it is navigable, though with difficulty, as its channel is interrupted by shoals and islands.

ISÈRE': department in the s.e. of France, bounded n. and w. by the river Rhone, e. by the dept. of Savoie, s. and s.e. by the depts. Drome and Hautes-Alpes; 3,200 sq. m., of which nearly a half is in arable land, and a fifth in wood. The surface is level in the n.w., but becomes mountainous toward the south, where the scenery is very imposing. Mount Olau, on the s.e. border, is 12,664 ft. high. The chief rivers besides the Rhone, are the Isère, from which the dept. has its name, and its affluents the Drac and Romanche. The dept. is one of the richest of France in mineral productions: mines of iron, lead, copper, and coal are worked, and gold and silver occur. The vine is carefully cultivated in the valleys; 5,324,000 gallons of wine are said to be produced annually. Arrondissements, Grenoble, La Tour-du-Pin, St. Marcellin, and Vienne: cap. Grenoble. Pop. of I. (1881) 573,833; (1891) 572,145; (1901) 568,693.

ISERIN—ISHMAEL.

ISERIN, or **ISERINE**, n. *ī'zēr-īn* [from the river *Iser*, in Silesia, near whose source it was first found]: a mineral of an iron-black color and of a bright metallic lustre, found in angular grains, rolled pieces, or in the form of black sand; titaniferous iron-sand.

ISERLOHN, *ē-zēr-lōn'*: important manufacturing town of Prussian Westphalia, in a picturesque and mountainous district, on the Baar, tributary of the Ruhr, 18 m. w. of Arnsberg. It is an ancient town. The industry of I. is chiefly the manufacture of hardware of various kinds, especially of brass and bronze. Pop. (1885) 20,012.

ISERNIA, *ē-sēr'nē-ā* (anc. *Æsernia*, a city of the Samnites): town of Italy, province of Campobasso, in a commanding position on the crest of a hill, 24 m. w. of Campobasso, 51 m. n.e. of Naples, surrounded by scenery of romantic beauty. The modern town consists chiefly of one long and narrow street, and is surrounded by walls. Among numerous antiquities is a subterranean aqueduct, hewn in the solid rock, which still supplies the fountains and manufactories with water, and remains unimpaired throughout its entire course of one mile. I. was much injured by an earthquake 1805, when some of its finest buildings were ruined. Woolens, paper, and earthenware are here manufactured. Pop. (1881) 9,015.

ISHIM, *īsh'īm*: river of Siberia, affluent of the Obi (q.v.).

ISHMAEL, *īsh'mā-ēl* [Heb. *Yishmael*, 'God hears']: son first-born of Abraham, by Hagar, Egyptian handmaid of his wife Sarah. His character was foretold before his birth by an angel, who was sent to Hagar sitting by a well in the wilderness on the way to Shur, whither she had fled to avoid the harsh treatment of her mistress: 'And he will be a wild [literally, 'a wild ass-'] man; his hand against every man, and every man's hand against him' (Gen. xvi. 12). Expelled from his father's house, with his mother, when he was about the age of 15, he went into the southern wilderness where he grew up to manhood, and became famous as an archer. It was predicted that he should become a great nation: this 'great nation' is commonly believed to be the Arabian; and there is no reason for doubt that at least the *northern* Arabs—the wild Bedouins who roam over the great wastes between the peninsula of Sinai and the Persian Gulf—may, to a certain degree, be descendants of Ishmael. There is, however, no ground for the notion that the founders of the great Joktanite and Cushite monarchies in s. Arabia were of Ishmaelitic origin; and the description given in Scripture of the character and habits of I. and his descendants does not in the least apply to these monarchies. The Bedouins of n. and central Arabia, on the other hand, are full of Ishmaelitic traditions. Mohammed asserted his descent from I.; and the Mohammedan doctors declare that Ishmael, and not Isaac, was offered up in sacrifice—transferring the scene of this act from Moriah in Palestine to Mount Arafāt

ISHMONIE—ISIDORE OF SEVILLE.

near Mecca; and that I. lies buried with his mother in the Kaaba in Mecca.

ISH'MONIE': the petrified city in Upper Egypt, full of men and women turned to stone.

ISHPEMING, *ish'pēm-īng*: city in Marquette co., Mich., on the Marquette Houghton and Outonagon and the Milwaukee Green Bay and Marquette div. of the Chicago and Northwestern railroads; 3 m. w. of Negaunee, 15 m. w.s.w. of Marquette. It contains several churches, school-house (cost \$50,000), large hotel, one national bank (cap. \$50,000), one state bank, and foundries, machine shops, and blast-furnaces. I. is on the Marquette, one of the 4 great iron ranges of the Lake Superior region, and still the principal seat of ore production, having shipped abt 1,960,000 tons of ore in 1890; and the I. dist. contains 14 producing mines, of which the Lake Superior (est. product 1889, 250,000 tons) and the Cleveland (210,000) are the most important. The 14 mines of I. yielded 13,759,936 tons of ore, or nearly one-third the total product of all the ranges up to 1888, Dec. 31, and a few thousand tons more than the combined output of the entire Menominee, Gogebic, and Vermilion ranges since they began to be worked. I. is also the seat of a gold range, discovered 1877, first worked 1881, and first provided with stamp-mills 1884. The yield of gold and silver has been \$34,510 (year ending 1886, Feb. 28); \$43,153 (1887, Feb. 28); \$34,930 (1888, Feb. 28); there was an output of 1,360,000 gross tons 1891. Mining operations were greatly extended, and 45 stamp-mills were in operation. Pop. (1880) 6,039; (1890) 11,197; (1900) 13,255.

ISIAC TABLE, *ī'sǎ-ak*: monument much esteemed and quoted by archæologists previous to the discovery of hieroglyphics, being a flat rectangular bronze plate, inlaid with niello and silver, about 4 ft. 8 inches long, by 3 ft. high. It was sold by a soldier of the Constable de Bourbon to a locksmith, and bought of the same by Cardinal Bembo 1527, passed after his death to Modena, and finally to Turin, where it is now deposited. It consists of three rows of figures of Egyptian deities and emblems. Its object was long supposed to have been votive, or even to have been the nativity of the Emperor Trajan; but it is now recognized as a very late or spurious monument.—Winckelman, *Op.* iii. 113, v. 450; Wilkinson, Sir G., *Mann. and Cust.*

ISIDOID, a. *ī'sīd-oyd* [*isis*, a genus of jointed corals: Gr. *isos*, equal, similar; *eidos*, resemblance]: in *bot.*, covered with a dense mass of conical soredia, as the surface of lichens. ISIDIOSE, a. *ī-sīd'ī-ōs*, having powdery, coralline excrescences. ISIDIIFEROUS, a. *ī'sīd ī-īf'ēr-ūs* [L. *fero*, I bear]: having isidiouse excrescences. ISIDIUM, n. *ī-sīd'ī-ūm*, coral-like soredia on the surface of some lichens—see Cooke's Manual of botanic terms.

ISIDORE OF SEVILLE, *īz'ī-dōr ōv sé-vīl'* (ISIDORUS HISPALENSIS): one of the most distinguished ecclesiastics in the latter part of the 6th and earlier part of the 7th c.; d. 636. He was b. at Carthagena, son of the prefect Severi-

ISIDORIAN DECRETALS.

anus. He is particularly remarkable as among the earliest representatives of the church of Spain, and of that great movement in the Western Church by which the doctrinal and moral system of Christianity was brought into harmony with the habits and institutions of those various races and nationalities which, by successive immigrations and wars, were eventually erected into the Hispano-Gothic kingdom, which exercised so powerful an influence on Latin Christianity. Two of his brothers, Fulgentius and Leander, were, like himself, bishops, the first of Carthage, the second succeeding I. in the see of Seville. The episcopate of I. is notable for the two half-ecclesiastical, half-civil councils of Toledo 619 and 633, held under his presidency, the canons of which may be said almost to have formed the basis of the constitutional law of the Spanish kingdoms, both for church and for state, till the great constitutional changes of the 15th c. He also collected with the same object all the decrees of councils and other church laws anterior to his time. His death forms one of the most remarkable scenes in early Christian history. When he became sensible of the approach of death, he summoned his flock to his bedside, exhorted them to mutual forbearance and charity, prayed their forgiveness for all his own deficiencies in his duty, and directed all his property to be distributed among the poor. His works, which are in the most various departments of knowledge— theological, ascetical, liturgical, scriptural, historical, philosophical, and even philological and scientific—were published first in 1580; but the most complete edition is that of Arevali, 7 vols. 4to (Rome 1797–1803). We are indebted to I. for many fragments of Greek and Latin authors; among these are several of whom hardly any other remains have been preserved. I.'s writings, though unsystematic, without originality, and of little inherent value, served an important purpose as the basis of instruction for students in the later Dark Ages (7th–10th c.)—preserving some remnants of the earlier learning.

ISIDORIAN DECRETALS, *iz-ĭ-dō'rĭ-an dē-krē'talz*, called also FALSE DECRETALS: spurious compilation of the 9th c., which, by a singular combination of circumstances, obtained currency in the Western Church, and continued for several centuries in unquestioned authority. Till the 9th c., the only authentic collection of decretals, that of Dionysius Exiguus, commenced with the decrees of Pope Siricius in the end of the 4th c. The so-called I. D. stretch back through the predecessors of Siricius up to Clement himself, and comprise no fewer than 59 decrees or epistles before the time of Siricius. In a later part of the Isidorian collection, moreover, are interpolated nearly 40 similar documents unknown prior to that compilation. All these documents are presented not merely as authentic, but as the genuine productions of the particular popes to whom they are attributed. The subject-matter of these decretals is most diversified, comprising the authority and privileges of the pope, the whole system of the hierarchy, with the relations of its several orders to each other and to

the common head. In all, there is a strong and systematic assumption of the papal supremacy; yet it is not probable that the direct object of the author was the exaltation of the papal prerogative. It is much more likely that the object was to protect the rights of bishops against the arbitrary rule of the metropolitans. Dean Milman thinks that the author believed that he 'was not asserting for Rome any prerogative which Rome herself had not claimed' (*Latin Christianity*), II., 378. Rom. Cath. historians, indeed, go further, and while they admit and denounce the clumsy fraud, contend that the easy and universal acceptance which the I. D. met, furnishes the strongest presumption that the discipline which they elaborated and methodized, was already in full possession, though without the formal and written law which the daring adventurer attempted to provide in decretals of the early pontiffs.

It is strange that the author, place, and date of this singular forgery are still unknown. It is certain that it did not come from Rome; and the most probable conjecture assigns its origin to Mentz, between 840 and 847. It was introduced under the name of Isidore of Seville (q.v.) as a part of the genuine collection known as his, and was believed to have been brought from Spain by Riculf, Abp. of Mentz. It is hardly possible, in an age of discussion like ours, to doubt that, when the I. D. first appeared, even the most superficial inquiry, or the slightest critical investigation of historical sources, would have sufficed to detect the fraud. 'It is impossible,' says Dean Milman, 'to deny that at least by citing without reserve or hesitation, the Roman pontiffs gave their deliberate sanction to this great historic fraud;' yet it is equally impossible to fix the limit beyond which, in an age so uncritical, literary or historical credulity might not be carried without provoking its susceptibility, or disturbing its peace.

From the first circulation of the false decretals till the 15th c., no doubts were raised regarding them. Nicholas of Cusa and Cardinal Turrecremata were the first to question their genuineness; but after the Reformation the question was fully opened. The centuriators of Magdeburg demonstrated their utterly apocryphal character. A reply was attempted by Father de la Torre; but the question was finally settled by Blondel.—See Milman's *Latin Christianity*, ii. 370-380; Walther's *Kirchenrecht*, p. 155; Gfrörer's *Kirchengeschichte*.

ISINGLASS, n. *ī'zīng-glās* [Ger. *hausenblase*, the bladder of the sturgeon—from Ger. *hausen*; Dut. *huizen*, a sturgeon, and Ger. *blase*; Dut. *blas*, a bladder]: a pure kind of gelatine, gelatinous and semi-transparent, obtained from the sounds or air-bladders of certain fresh-water fish, the best being obtained from the sturgeon; fish-glue: see GELATINE. *Note*.—The spelling *isinglass*, as a corruption of *hausenblase*, has probably arisen from connecting the name with its employment in *icing*, or in making jellies.

ISIS, n. *ī'sīs* [Celtic, *uisq*; Gael. *uisge*, water]: another name for the river Thames, but really forming its latter

ISIS.

part, thus L. *Tam-esis*, and signifying ‘ broad Isis or Water:’ see THAMES.

ISIS, n. *ī'sīs* [Gr. *isos*, equal, similar]: a genus of jointed corals.

ISIS: see PLANETOIDS.

ISIS, n. *ī'sīs*: one of the chief deities in the Egyptian mythology, the mother of Horus, and sister and wife of Osiris. By the Egyptians she was called *Hes*, and said to be daughter of *Seb* or Chronos, and Nu or Rhea; according to other versions, of Hermes and Rhea; and to have been born on the 4th day of the Epagomenæ, or of the five days added to the Egyptian year of 360 days. After the murder of Osiris by Typhon, and the throwing of him in a coffin into the Tanitic mouth of the Nile on the 17th Athyr, I. was informed of the deed by the Pans and Satyrs, and went into mourning at Coptos; and hearing from some children where the chest had been thrown, proceeded to seek for it in company with Anubis, and discovered it inclosed in a tamarisk column in the palace of Malcander, at Byblos; and sitting down at a fountain in grief, was discovered by the ambrosial scent of her hair, and invited to the court by the Queen Astarte, to nurse her children. One of these she fed with her finger, and endeavored to render immortal by placing him in flames, while she herself, under the form of a swallow, flew round the column and bemoaned her fate. Having obtained the column, I. took out the chest of Osiris, wrapped it in linen, and lamented so deeply, that the youngest of the queen's sons died of fright. She then set forth with the chest and eldest son to Egypt, dried up the river Phædrus on her way, and killed with her glances the eldest son, named Maneros, who had spied her secret grief in the desert. Having deposited the chest in a secret place, she proceeded to Buto to Horus; but Typhon discovered the chest, and divided the body into 28 or 26 portions, and scattered it over the country. These the goddess again sought, and found, except the phallus, which had been eaten by fish; and wherever she found any of the limbs, she set up a tablet, or sent an embalmed portion, deposited in a figure of the god, to the principal cities of Egypt, each of which subsequently claimed to be the true birthplace of Osiris. After the battle of Horus and Typhon, I. liberated Typhon, and had her diadem torn off, and replaced by one in the shape of a cow. She was the mother of Haroeris by Osiris before her birth, and of Harpocrates after the death of Osiris. She buried Osiris at Philæ. The monarch Rhampsinitus played at dice with her in Hades. Her soul was supposed to have passed into the star Sothis or Sirius. Her worship was universal throughout Egypt, but had its particular seat at Philæ and at Bubastis, where a special festival was celebrated to her; and her tears were supposed to cause the inundation of the Nile. Another festival was celebrated to her at the harvest.

In the monuments, she is called the goddess-mother, mistress of heaven, sister and wife of Osiris, and nurse of Horus, mourner of her brother. eye of the sun, and regent

ISKANDEROON—ISLA DE LEON.

of the gods. In her terrestrial character, she wears on her head the throne which represented her name; in her celestial, the disc and horns, or tall plumes. She is often seen suckling Horus; sometimes she has the head of a cow, indicating her identity with the cow Athor, of whom the sun was born. Occasionally, she is identified with other female deities, such as Pasht. On her head, she wears the vulture symbol of maternity. Her attributes were assumed by the queens of Egypt; and Cleopatra sat and gave responses in the character of the youthful Isis.

The worship of I. was introduced into Rome by Sulla (B. C. 86) from Tithorea, and shared the fate of that of other Egyptian deities, being associated with that of Serapis, Anubis, and others, and the temples from time to time destroyed. It flourished under the Flavians and Hadrian. At this time, I. was represented with a sistrum or rattle, a bucket, and a dress with a fringed border, knotted at the chest. On the Alexandrian coins, I. appears as *Pharia*, before the Pharos, holding a full sail. The festivals, seclusion, rules of chastity, attracted many followers, but the worship was considered not altogether reputable by the Romans. It was more extended and respected in Asia Minor and the provinces, but fell before Christianity (391). I. was worshipped as the giver of dreams, and in the twofold character of restorer of health and inflicter of diseases.

The myth of I., as given by Plutarch, appears to be a fusion of Egyptian and Phœnician traditions, and the esoteric explanations offered by that writer and others show the high antiquity and unintelligibility of her name. She was thought to mean the cause, seat, or the earth, to be the same as the Egyptian Neith or Minerva, and Athor or Venus; to be the Greek Demeter or Ceres, Hecate, or even Io. Many monuments have been found of this goddess, and a temple at Pompeii, and a hymn in her honor at Antioch. The representations of her under the Roman empire are most numerous, I. having, in the pantheistic spirit of the age, been compared with and figured as all the principal goddesses of the Pantheon.—Plutarch, *De Iside*; Herod. ii. c. 59; Ovid, *Met.* ix. 776; Bunsen's *Egypt's Place*, i. p. 413; Wilkinson, Sir G., *Mann. and Cust.*, iii. 276, iv. 366; Birch, *Gall. Ant.* p. 31.

ISKANDEROON': see ISCANDERÛN.

ISKELIB, *ış'keh-lēb*, or ESKILUP, *ēs'kē-lŭp*: town of Asiatic Turkey, in the vilayet of Anatolia, near the Kizil-İrmak, about 260 m. e. of Scutari. There are several mosques and a ruinous castle on the top of a bold and naked limestone rock. In the neighborhood are sepulchral caverns, some of which are sculptured. Pop. estimated 9,000.

ISLA DE LEON, *ēs'lā dā lā-ōn'*: island on the s. coast of Spain, in the Atlantic Ocean, belonging to the province of Cadiz, and separated from the mainland by Santi Petri channel. It is 10 m. long, 2 m. wide, and contains the cities of Cadiz and Isla de Leon; the latter known also as San Fernando, the capital of Spain under the regency 1810,

ISLA DE NEGROS—ISLAND.

and the scene of the constitutional movement 1820. The old capital has strong fortifications, 2 hospitals, a noted observatory, several convents, and manufactories of soap, leather, salt, and spirits. Pop. (island) estimated 10,000—18,000.

ISLA DE NEGROS, *ēs'lá dā nā'grōs*: island of the Philippine group, Malay Archipelago, Pacific Ocean; separated by narrow channels from Panay on the n.w. and Cebu on the s.e.; extending lat. 9° 3'—10° 58' n., long 122° 28'—123° 29' e.; length 150 m.; average width, 25 m.; area, 3,800 sq.m.; pop. (1891) estimated 260,000. The inhabitants are chiefly Malay Indians; but there are many Spanish creoles, Chinese, half-Chinese, and E. Indian Mohammedans.

ISLA DE PINOS, *ēs'lá dā pē'nōs*: almost circular island off the s. coast of Cuba; 800 sq. m.; largest of the numerous outlying islands of Cuba. It has an excellent climate, exuberant fertility, rich mines, and valuable timber.

ISLAMABAD': See **CHITTAGONG**.

ISLAMISM, n. *īz'lā-mīzm* [Ar. *islam*, obedience to the will of God—from *salāmā*, to submit to God: or *islam*, peace, salvation, a righteous man—from *salm*, to be at perfect peace]: the religion or creed of Mohammed. **ISLAM**, n. *īz'lām*, the religion of Mohammed; the whole body of the faithful, and the countries in which Islamism is professed. **ISLAMITE**, n. *īz'lām-īt*, a follower of Mohammed. **IS'LAMIT'IC**, a. *-mīt'ik*, pertaining to Islamism.—*Islām*, or *Eslām*, may be said to be the proper name of the Mohammedan religion; designating complete and entire submission of body and soul to God, his will and his service, as well as to all those articles of faith, commands, and ordinances revealed to and ordained by Mohammed as the prophet of God (see **MOHAMMEDANISM**). Islam, it is held, was once the religion of all men; but whether wickedness and idolatry came into the world after the murder of Abel, or at the time of Noah, or only after Amru Ibn Lohai, one of the first and greatest idolaters of Arabia, is in dispute among Moslim (a word derived from *Islam*) theologians. Every child, it is believed, is born in Islam, or the true faith, and would continue in it till the end were it not for the wickedness of its parents, 'who misguide it early, and lead it astray to Magism (see **GUEBRES**), Judaism, or Christianity.' See **MOHAMMED**: **KORÂN**.

ISLAND, n. *ī'lānd* [AS. *igland*—from *eage*, an eye: Fris. *ooge*, an eye, an island: literally, *eye-land*—the true etymology being preserved in *eyot* or *ait*, a small island in a river]: spot of land surrounded by water, having the appearance of the eye in relation to the face; a tract or portion of land wholly surrounded by water. Australia is called sometimes a continent, sometimes an island, the distinction of the terms being vague; even the great e. and w. continents are surrounded with water; thus all land on the globe is *island*. In the ocean between Australia and Asia, and eastward, islands are more numerous than anywhere else in the world. There, also, are the largest

ISLANDS OF THE BLESSED—ISLE.

islands. Excluding Australia, the largest islands on the globe are Papua, Borneo, and (as seems recently assured) Greenland; after these, Madagascar, Sumatra, and Great Britain. Islands are often in groups, and archipelagoes. Wallace, in his valuable *Island Life* (1880), points out the marked distinctions between *Continental* and *Oceanic* islands respectively. Some islands have the appearance of intimate geological connection with the continents near which they are situated, and some of such connection with each other that they seem as if they were the remaining parts of a former continent; others, generally of more circular form, have their geological character more complete in itself. In the South Seas, there are two very distinct classes of islands, one mountainous, often with active volcanoes; the other low and flat, formed of coral; see CORAL ISLANDS. ISLANDER, n. *-ēr*, an inhabitant of an island. ISLANDED, a. formed as an island. *Note*.—Max Müller asserts that ISLAND ought properly to be spelt ILAND, and that the first part is Goth *ahva*, L. *aqua*, water; hence AS. *eoland*, Icel. *aland*, means water-land; *iland* or *yland* is really the OE. spelling, and possibly the *s* was inserted to form *island* from the analogy of the OF. word *isle*, derived from lat. *insula*.

ISLANDS OF THE BLESSED were according to a very old Greek myth, certain happy isles situated towards the edge of the Western Ocean, where the favorites of the gods, rescued from death, dwelt in joy, and possessed everything in abundance that could contribute to it.

ISLAY, *ī'li*: island on the w. coast of Scotland, belonging to the group of the Inner Hebrides, and to the county of Argyle. It is w. of the peninsula of Kintyre, about 15 m. s.w. of the island of Jura, from which it is separated by a strait called the Sound of Islay: greatest length, 24 m.; greatest breadth, 17 m.; about 220 sq. m. In the n., the island is hilly, and along the e. shore runs a ridge 800 to more than 1,500 ft. in height. The central and w. districts are undulating or flat. Agriculture has of late years been greatly improved; the number of acres under cultivation is about 22,000, and abundant crops, both white and green, are produced. There are eight distilleries on the island, which produce about 400,000 gallons of whisky annually. Chief exports, black-cattle, sheep, and whisky. Lead and copper ores have been worked in mines in the interior, but not shipped to any considerable extent. Pop. (1881) 7,559.

ISLE, n. *īl* [OF. *isle*, island—from L. *insulā*; It. *isola*, an island]: an island. ISLET, n. *ī'lēt* [OF. *islette*]: a little island. ISLE OF DOGS, a peninsula jutting into the Thames a few miles below London—in what may be called its isthmus are situated the W. I. Docks. The island is said to have been named as containing the kennels of Edward III.; more probably only a corruption of *Isle of Ducks*, from the fact of numerous wild ducks frequenting its marshes. *Note*—ISLE, though used in same sense, is quite a different word from *island*, and is not a mere corruption or abbreviation of it,

ISLE LA MOTTE—ISLES.

ISLE LA MOTTE, *êl lâ môt*: island in Lake Champlain, comprising Isle la Motte tp., Grand Isle co., Vt.; known also as the 'Vineyard'; 30 m. n. of Burlington; 6 m. long. It contains a post-office, and large and valuable quarries of black, gray, and variegated marble. Pop. (1870) 497; (1880) 504; (1900) 508.

ISLE OF FRANCE: see FRANCE, ISLE OF.

ISLE OF MAN: see MAN, ISLE OF.

ISLE OF WIGHT: see WIGHT, ISLE OF.

ISLES, LORDS OF THE: chiefs of the Western Islands of Scotland, famous in poetry and romance. No proper historical account of them has yet been written, and it is difficult to discriminate between truth and fable in the various notices which have been preserved. The Western Islands or Hebrides, as they were afterward called, originally a portion of the domains of the Scots and Picts, were subdued by the Norwegians. When Scotland became consolidated into one monarchy, its kings endeavored to wrest the islands from the Norsemen; and during the contest which ensued, the various chiefs professed allegiance sometimes to the king of Scotland, sometimes to the king of Norway, or to their own immediate superior, who ruled in Man. The Scottish supremacy was established by the victory of Largs, in the reign of Alexander III., and the final cession of the islands by Magnus, son of Haco, King of Norway, made 1266. By that treaty, all the islands of the Scottish seas, except those of Orkney and Zetland, were surrendered to Scotland. Man was conquered by the English during the wars of the succession, but the other islands remained subject to the Scottish sovereigns. The first name which generally appears in the list of the Lords of the Isles, as distinct from the kings of Man, is Somerled; and the great chiefs who afterward held the islands and portions of the mainland near them, claimed descent from this powerful lord. He appears prominently in Scottish history in the middle of the 12th c., during the reigns of David I., and his grandson and successor, Malcolm IV. How he acquired his authority, is not precisely known. Even the race to which he belonged is uncertain; probably, like most of his subjects, he was of mixed descent, Norwegian and Celtic. His sister was married to Malcolm Mac-Heth, head of the great Celtic family of Murray, who has been confounded by most Scottish writers with the impostor Wimund, and whose true history has been set forth by E. W. Robertson in *Scotland under her Early Kings*. In 1164, Somerled landed on the coast of Renfrew, at the head of his subjects of Argyle and the Isles, and was defeated and slain. His dominions seem to have been divided among three of his sons—Dugal, Angus, and Reginald or Ronald. The descendants of Dugal became Lords of Argyle and Lorn; and those of Reginald, Lords of the Isles. Reginald is said to have been succeeded by Donald, and Donald by Angus Mor, father of Angus Og. We know from Barbour that Angus of the Isles, 'Lord and Leader of Kintyre,' gave his fealty to Bruce when

ISLES.

most hardly pressed at the beginning of his reign, receiving him into his castle of Dunarverty, and that he afterward fought under the great king at Bannockburn. This chief is the hero of *The Lord of the Isles*, but his name, as Scott tells us, 'has been, *euphonia gratiâ*, exchanged for that of Ronald.' John of the Isles, son of Angus, married, first, his cousin, Amy of the Isles, secondly, Margaret, daughter of King Robert II.; and among his descendants by these marriages are said to be the M'Donalds of Sleat, Keppoch, Glengarry, and Clanranald. During the troubled and disastrous reign of David II., John of the Isles was able to maintain practical independence of the Scottish crown, but was at last compelled to submit. He met David at Inverness, 1369, and gave hostages for his fidelity. His successor was Donald, his eldest son by Margaret of Scotland, and the most powerful of all the island lords. He set the kings of Scotland at defiance, and made treaties as an independent sovereign with the kings of England. He married Margaret, daughter of Euphemia, Countess of Ross. Margaret's brother, Alexander, Earl of Ross, by his marriage with a daughter of the Regent Albany, left an only child, who became a nun. Donald claimed the earldom in his wife's right; and when this claim was refused by the regent, he prepared to maintain it by force. Taking possession of Ross, he marched at the head of a large army from Inverness, through Murray and Strathbogie, entered the Garioch, and threatened to destroy the burgh of Aberdeen. At Harlaw (q.v.), near Inverury, he was encountered on St. James's eve, 1411, by a Lowland army much inferior in number, commanded by Alexander Stewart, Earl of Mar. The action was fiercely contested, and, though not decisive in itself, the Lord of the Isles retreated, and all the advantages of the combat remained with Mar. This engagement, famous in history and song, probably saved the Lowlands of Scotland from Celtic supremacy. Donald was soon afterward forced to surrender the earldom of Ross, and to submit to the regent. He was succeeded by his son Alexander. This lord, like other great Scottish nobles, was seized and imprisoned by James I., who was determined to allow no rule in Scotland except his own. When restored to liberty, he again stirred up insurrection, but his army was routed; and in order to obtain pardon, he appeared at the altar of the church at Holyrood, and kneeling half clothed before the king, presented his sword and implored forgiveness. After a short imprisonment, he was again pardoned. At his mother's death, he assumed the style of Earl of Ross, and seems to have been in possession of the earldom. He was succeeded as Earl of Ross and Lord of the Isles by John, his eldest son. John, like his predecessors, acted as an independent sovereign rather than as vassal of the king of Scots. He entered into a confederacy with the earls of Douglas and Crawford, the one, the most powerful nobleman in the south, the other, in the centre of Scotland; and had they acted together with promptness and determination, the House of Stewart might have ceased to reign

ISLES OF SHOALS—ISLIP.

In 1461, Oct., at his castle of Artornish, on the coast of Argyle, he granted a commission to his kinsman Ronald, and Duncan, Archdeacon of the Isles, to enter into a treaty with Edward IV. of England. By that treaty, concluded in the following year, he agreed to become liegeman to Edward and to assist him in conquering Scotland. He was attainted more than once, and finally was forced to resign the earldom of Ross, which was annexed to the crown. This took place 1476, July 10, and John was at the same time created Lord of the Isles. He is said to have died 1498. After his decease, the title Lord of the Isles was assumed by Donald the Bastard, son of Angus of the Isles, illegitimate son of John, Lord of the Isles; and several chiefs were attainted 1503 and 1505 for supporting his claims. In 1545, July, another Donald, styling himself Earl of Ross and Lord of the Isles, presiding in a sort of Highland parliament, granted permission to the Bishop Elect of the Isles and another person to enter into a treaty with the Earl of Lennox, then acting for Henry VIII. of England. This document is given by Tytler, historian of Scotland, who remarks that 'it is a diplomatic curiosity, not one of the Highland chieftains, 18 in number, being able to write his name.' In a paper addressed by the Highland Commissioners to the Privy Council of England, they speak of their constituents as 'the auld enemies to the realm of Scotland,' the very name by which the Scottish parliament was wont to speak of the English. Various persons, claiming to be descendants of John, Earl of Ross, assumed the style of Lord of the Isles; but the title does not appear to have been recognized after his decease, except as annexed to the crown. The eldest son of the Scottish sovereign has generally used the style of Lord of the Isles with his other titles.

ISLES OF SHOALS, *ilz ov shōlz*: cluster of 8 small and almost barren islands in the Atlantic Ocean, 10 m. s.s.e. of Portsmouth, N. H.; known as Appledore or Hog, Haley's or Smutty Nose, Malaga, Cedar, Gosport or Star, White, Seavey's, and Londoner's. Appledore, Haley's, Malaga, and Cedar belong to York co., Me., and Gosport, White, Seavey's, and Londoner's to Rockingham co., N. H., and constitute the town of Gosport. White Island, the most westerly, contains a powerful revolving light (lat. 42° 58' n., long. 70° 37' 20' w.), and on Appledore and Star Islands are large hotels for summer tourists. The group is said to have been discovered by Champlain 1605, and received the name of Smith's Islands from Capt. John Smith who cruised there 1614. Their permanent population is comprised almost wholly of fishermen, and does not exceed 200.

ISLINGTON: suburb of London, so closely connected as to form part of it; two m. n. of St. Paul's. It is remarkable for the number of its religious, educational, and benevolent institutions. Pop. (1861) 155,341; (1871) 213,778; (1881) 282,628; (1891) 319,433; (1901) 334,928.

ISLIP, *is'lip*: tp. and post-v. of Suffolk co. (Long Island), N. Y.; on Great South Bay and Montauk div. of

ISMAIL—ISMAILIA.

Long Island railroad; 40 m. e. of New York. The tp. contains several other villages, 15 churches, 2 academies, flour, paper, and planing mills, marine railway and shipyard, several sporting club-houses, trout preserves, and fishing and canned goods interests. It is a popular summer resort. Pop. tp. (1880) 6,453; (1890) 8,783.

ISMAIL, *is-má-ēl'*: town and river-port in the Russian govt. of Bessarabia, on the n. bank of the Kilia branch of the Danube, about 40 m. from the mouth of the Danube. It was taken and destroyed by Suvorof 1790, Dec.: its garrison of 40,000 men lost 30,000; the Russian invaders lost 10,000. It came into possession of Russia 1812; was assigned to Moldavia by the treaty of Paris 1856; and was transferred to Russia again by the Berlin Congress of 1878. It has important trade in corn, and considerable general trade. Pop. (1885) 33,084.

ISMAIL I., ex-Khédive of Egypt: b. Cairo, 1830, Dec. 31 (reigned 1863-79); son of Ibrahim Pasha. He was educated in Paris; opposed Abbas Pasha, who succeeded his father 1848, died 1849, and was succeeded by Said Pasha; became commander of the Egyptian army 1862; succeeded to the vice-royalty 1863, Jan. 18; by increasing his tribute and aiding the sultan with his army in the Cretan insurrection 1866, he secured from the sultan the direct succession of his line, and 1867 the titles of highness and khédive; increased his army, assumed jurisdiction over the Upper and White Nile, and sought to establish himself as an independent monarch 1868-9; and was forced to reduce his army, recall orders for iron-clad war vessels, and cease contracting loans in Europe. Subsequently he obtained concessions from the sultan which made him practically independent. He was one of the most zealous promoters of the Suez Canal, became very wealthy by growing cotton during the American civil war, and improved Egypt vastly, but at a cost which the country will be unable to pay for many years. He was deposed by the sultan 1879, June 26. He d. near Constantinople 1895, Mar. 2.

ISMAILIA, *is-má-ē'lē-á*: town in Egypt: see SUEZ CANAL.

ISMAI'LIA, or GONDOKORO, *gõn-do-kõ'rõ*: town in Africa: see GONDOKORO.

ISMAILIS.

ISMAILIS, *is-mâ-ê'îz*, or ISMAEELIAH, *is-mâ-ê'lê-â*, or ISMAËLIANS, *is-mâ-ê'lê-anz*: very advanced 'free-thinking Mohammedan sect, of the Shiite branch of Islam (see SHITES), which sprang up in the 9th c. and spread throughout Mohammedanism. Recognizing Ali alone as the rightful successor of the Prophet, they held Abu Bekr, Omar, Othman, Moawia to be usurpers, and counted their Imans, or representative prophets, from Ali only. The seventh Imam was one Ismaïl, who lived about 150 Hégira (A.D. 772), son of Jafar Assadik, or rather of his son Mohammed. Ismaïl was supposed to be the righteous Prophet, the only orthodox, spiritual head. The notion of the Imam, in general, is that of an ever-living, though at times hidden supreme guide of the people, who after a time is restored to humanity, or at least to the believing part of it. A prayer, preserved by Ibn Chaldun, will best show the peculiar notion connected with this belief, to which no small part of Islam confessed. Every evening, a certain number of Inamieh's prayed: 'O Imam, appear unto us' Humanity is awaiting thee; for righteousness and truth have perished, and the world is gone down in darkness and violence. Appear unto us, that we may, through thee, return unto God's mercy.' It was thought, in fact, that Ali himself had reappeared in every Imam, and that he would descend again, some day, 'from the clouds,' to unite all believers, and to restore the pure faith. The real importance of this sect, which had existed unobserved for some time, dates from Abdallah Ibn Maimun, whose father had been put to death for professing materialistic doctrines, and trying to turn people away from the doctrines of Islam. Abdallah seems to have practically carried out his father's notions, but more cautiously. He is described by the Arabic writers as an utterly irreligious and unscrupulous materialist or 'Zendik.' The Messiah, whom he preached, stood higher than Mohammed himself, and though he did not exactly reject the Koran *en bloc*, he yet contrived to allegorize and symbolize away nearly all its narratives and precepts. But the systematic way in which Abdallah went to work, in trying to undermine, and eventually to abrogate, all Islam, and, as his biographers have it, to replace it by materialism, atheism, and immorality, is very remarkable.

He established missionary schools; and the instructions given to the young missionaries were artfully designed to win over not merely all the different Mohammedan sects, both Sunnites and Shiites, but also Jews and Christians. The missionary's (da'i's) first task was to win for himself the perfect confidence of the proselyte to be, by the affectation of great orthodoxy, and by a vast display of pious learning, chiefly Koranic. The disciple is by degrees to be cross-examined on difficult passages, on their 'spiritual meaning,' and on some points touched upon belonging to the physical sciences. Only matters of acknowledged obscurity and uncertainty are chosen as subjects of discourse, matters, the real understanding of which belongs exclusively to the 'aristocracy of learning.' Gen-

erally, the youth is so deeply impressed with the erudition displayed, the expectations raised, the mystery, and the rest, that he will follow gladly to the end. But, at times, the missionary meets with a less docile subject, a man who may be accustomed to discussions on these topics, who may himself have pondered over these things: the daï shall appear to accommodate himself to such a one's views, applaud all he says, and thus ingratiate himself with him; all the while taking care to show himself well informed on those points which may be in favor with his disciple, and that mode of faith which he professes. All this is to be done very carefully, lest the other might 'suspect and betray.' The ordinary individual, on the other hand, is, after the first preliminaries, to be told that religion is a secret science, that most people know nothing of it, or utterly misunderstand it, that if the Moslems knew what degree of science God has imparted to the Imams, by quite a special favor, there would no longer be any dissensions among them. The disciple, whose curiosity has by that time been fully roused, is then to be instructed in a few allegorical interpretations of both the practice and theory of the Koran; and when he is convinced of the desirability to know more, and everything that the master knows, the latter is merely to point out to him that all this knowledge belonged of right to all Islam, but that the wickedness and perverseness of those who followed the wrong successor, has caused all dissension and infidelity in the community of the believers. It is the Imams who are the dispensers of the right interpretation, not people's own reason and judgment.

For the religion of Mohammed, they were to tell the disciple at this stage, was not a thing easy to comprehend. It did not mean to flatter the senses, or to dazzle by outward signs. It was, on the contrary, a difficult, the most difficult matter. Only angels of the first rank, or a prophet specially chosen, or a faithful servant whose heart God had searched and found true, were worthy of bearing this most precious of all burdens. By these and other speeches, the ordinary disciple is soon brought to revere and to admire the daï beyond all other men around him, on whom he looks henceforth only as on inferior beings and infidels; and his desire of knowing more or all becomes passionate. But hitherto the procedure has been discreet. All that was desired in this first preliminary stage, was to unsettle the man's faith. The preparatory questions put to the neophyte were so contrived as completely to puzzle and bewilder him (e.g.—Why did God take seven days in the creation of the world? Why are there 12 wells and 12 months? What is the figure of your soul?); and if the missionaries themselves proceeded to answer them, it was by allegorizing interpretations of the Koran, the Sunnah, and the Laws. But they used the common artifice of stopping short just in the middle of an explanation, for they said, when pressed to continue: 'These things are not lightly to be communicated; God always requires a pledge first. If you will swear into my

hands, with the most solemn and inviolable oaths, never to divulge our secret, never to give any assistance to our adversaries, never to lay a trap for us, and never to speak to us except for the purpose of telling us the truth, then I will tell you more.' When, if the neophyte has taken the requisite oath—and it is only at the very commencement of the initiation that oaths are of any moment to the Ismaili—he is further asked to contribute a certain sum of money, as a pledge for his sincerity. Should the convert, however, exhibit the slightest reluctance either in swearing or in paying, he is instantly given up by the daī—'a prey to the never-to-be-solved doubts of his heart.'

Thus far the *first* preliminary degree. In the *second*, the missionary begins to initiate the neophyte's mind into the doctrines of the Imamāt—i.e., to prove to him, by arguments and proofs best adapted to his mind, how the understanding of God's religion can be accomplished only by following the revelations given to and communicated by certain special delegates; whose names are communicated to him in the *third* degree. There are, he is told, seven such Imams, as there are (according to the Koran, Sur. 65, 12) seven planets, seven heavens, seven earths—viz., Ali, Hassan, Husein, Ali Zein Alabidin, Mohammed Albakir, Jafar Assadik, Ismaïl. In the *fourth* degree, the proselyte learns that the number of the prophets whose task it was to abrogate at different periods the ancient forms of faith, and to substitute new laws, is also seven, like that of the Imams; that each of them had a 'companion,' to whom he confided his whole dispensation and its sacred meanings, and that the latter communicated the same in a secret manner, and by oral tradition, to another man after him, who again handed it down to a successor; until after a string of seven such 'successors,' or *samet* (silent ones), in contradistinction to the prophet (*natik*) or speaking, teaching one, a new Imam is born. The traditional chain has thus never been broken. After seven times seven such successions of prophets and their 'silent' successors—during which seven religions were successively abrogated—there appeared the last and crowning prophet, who abrogated all the religions that were before him, and who is the 'chief of the last century'—the last natik. These seven are: (1) Adam, with his companion ('Soos') Seth; (2) Noah, with Sem; (3) Abraham, with Ismael; (4) Moses, with Aaron. The last of the seven 'silent ones' that followed him was John, the son of Zachariah. The 5th is Jesus, the son of Mary, with Simen 'Kepha'—by them supposed to be Arabic = purity. The 6th of the 'speaking prophets' is Mohammed, son of Abdallah; with him was Ali, the son of Abu Talib; and he was followed by six other 'silent ones,' who transmitted to each other the secret mysteries of his religion; the last of whom was Ismaïl, son of Jafar Sadik. The 7th of the prophets is the 'Chief' or 'Master of the century.' In him culminate and are completed all those sciences which are called 'the Sciences of the Primeval Ones.' It is he who has first fully opened up the inner and mystic meaning of the words of

ISMAILIS.

faith; from him, to the exclusion of every one else, their explanation is to be received. He, and he alone, is to be followed, obeyed, and trusted in all things. By utterly submitting to his words and teachings alone, man is in the right path. All the prophets and all their teachings without exception before him are abrogated through him and by him.

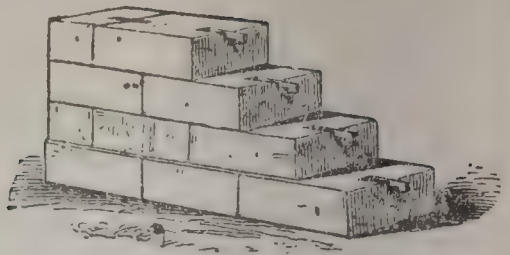
In the *fifth* degree, the Koran and its precepts are made subjects of discussion. It is proved to the convert how utterly wrong and foolish it is to interpret the words in their usual sense. Here, again, great subtlety is brought to bear upon the disciple. If he be a Persian, he is told that the Arabs are the oppressors of his country, upon which, with other humiliations, they have also imposed the slavish worship of this book. If he be an Arab, his mind is wrought up against the Persians, who, he is told, have appropriated to themselves the pontificate and the sovereignty, that by rights belonged to the Arabs. He is then instructed in a multitude of mystical relations of things depending upon numbers.

The practical religious instruction begins with the *sixth* degree, into which the neophyte enters only when fully prepared in his mind to deny all positive religion, and when he has given the most undoubted pledges of his discretion and silence. Every Koranic precept is now allegorized. Prayer, tithes, pilgrimage, legal purity, and other religious observances, are cautiously and systematically interpreted to mean certain spiritual things only. These precepts, the missionary explains, have been established only 'as enigmas by the philosophical prophets and Imams, who saw in them the only means of keeping the common people in dependence, of exciting them to actions useful to society, of preventing them from hurting each other, and from committing gross crimes.' But by slow degrees, the philosophers, Plato, Aristotle, Pythagoras, and their systems are introduced to the neophyte. They and their systems are contrasted with the Prophet and the Imams, and their dicta. The result is represented as by no means flattering to the latter. The learner is distinctly shown the absurdity of a blind belief in so-called historical traditions; it is made clear to him how hearsays and legends differ from reason and the full and free action of the logical faculties: in this way the open contempt with which the Imams themselves are then spoken of, no longer shocks the disciple to any very great extent.

The *seventh* degree paves the way for the negation of God's unity, which is fully carried out in the *eighth*. Here the Demiurgos, i.e., a second god (see DEMIURGE: GNOSTICS: ETC.), little inferior to the Supreme Being, is the real creator of all things. The first cause, or the 'Pre-existing,' has neither hands nor attributes; no one is to talk of Him, or to render Him any worship. Much as this part of the doctrine has given cause to discussions within the bosom of the I. themselves, it is yet scarcely doubtful that it is the notion of the Demiurgos that has crept in here. Hanza himself speaks of this 'pre-existence' as the Word,



Isis.

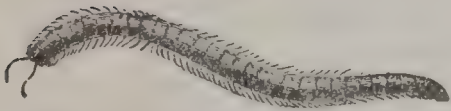


Isodomon.



Isopoda.

1, Bopyrus Squillarum, Sedentary section; 2, Cymodocea Lamarkii, Nataatory section; 3, Oniscus Asellus, Cursorial section. a, Head; b, Thorax; c, Abdomen.



Iulus Plicatus or Millipede.



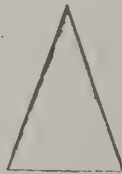
Jacamar.



Jacana.



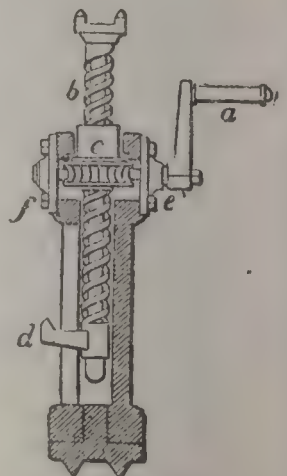
Long-tailed Jacana (*Parra sinensis*.)



Isosceles Triangle



Lion Issuant.



Lifting Jack.

ISMAILIS.

or *Logos* (q.v.), though nothing can be more obscure than the manner in which this most abstruse dogma is either explained or denied by the different doctors. The Koran and the 'Word of God' are then taken in hand, and explained to the proselyte in a fashion very different from the one that he had been accustomed to. The resurrection, the end of the world, the supreme judgment, the distribution of rewards and punishments are treated as allegorical or mystical symbols of the revolutions of the stars and the universe, which follow each other periodically, and of the destruction and reproduction of all things terrestrial, such as physical science and philosophy teach. The *ninth* and concluding degree of initiation frees the proselyte from all and every restraint with regard to his belief. He may, and some do, adopt the system of Manes (see LARES), of the Magi (q.v.), of Aristotle or Plato, or he may proceed eclectically with them all. As to the notions previously instilled into his mind with regard to the prophets or the Imams, he is now led to look on all those 'inspired' people as without exception inferior to Mohammed ben Ismail, the chief and doctor of the last period. The disciple learns, at this stage, that no miracle has ever been performed by any one of them; that the prophet is merely a man distinguished by his purity and the perfection of his intelligence, and that this purity of his intelligence is precisely what is called 'prophecy.' God throws into the prophet's mind what pleases Him, and that is what is understood by 'Word of God.' The prophet clothes this word afterward with flesh and bones, and communicates it to the creatures. He establishes by this means the systems of religious institutions which appear to him most advantageous for the ruling of men; but these institutions and behests are but temporary, and intended for the preservation of order and worldly interests. No man who *knows* need practice any single one of them; to him, his *knowledge* suffices.

As to Mohammed, son of Ismail, of whom the proselyte is told at first that he will reappear in this world—he is afterward represented to him as destined to reappear merely in his doctrine, by means of the propagation of his pure philosophy by the mouth of his disciples and apostles. As to the Arabs themselves, the missionaries teach that God abhors them, on account of their having killed Husein, the son of Ali, and that he has therefore taken from the caliphs the Imamat as he took from the Israelites the prophetic succession, when they had killed their prophets.

Thus the creed of the I. had been gradually built up. Many changes were introduced into it at different times, and among them this very important one: That the person of Mohammed, son of Ismail, itself was changed for another, a descendant of Abdallah, son of Maimum Kad-dah.

The two principal writers on this subject are Makrizi and Nowairi; to the latter of whom the greater part of the foregoing information is due. He has preserved for us at length the very curious oath imposed on the proselytes at

ISMAIL PASHA—ISOBAROMETRIC.

the beginning of the initiation; and also certain instructions reserved for the missionary himself, which simply teach him to 'be all things to all men.' The following is a characteristic sample: 'Then, again, there will be those to whom you must preach the belief in a living Imam. Say Mohammed ben Ismaïl is alive at this moment. Be very gentle and modest with them; pretend to despise gold and silver; make them recite 50 prayers a day; recommend them to abstain from lying and other vices, also from wine. These people are of the utmost use to us. Leave them in their special creed, only just telling them some of the mysteries of the number Seven; but break their spirit by the surcharge of prayer. These will be our best proofs against any assertions of an advanced disciple, if he should betray us. Furthermore, these people, when properly managed, are sure to leave you at their death all their money, as they would, during their lifetime, give you everything they possessed without a murmur. The more advanced, you may at once inform of the abrogation of Mohammedanism by our Imam—of the worthlessness of the Koran and its laws in their literal sense. To the still higher disciples, you may confide the entirely spiritual nature of the Imam's "life" in such a manner that their belief in the dogma of the resurrection is practically destroyed by it. From this stage you will conduct some to the renunciation of the belief in the existence of those heavenly beings, the "angels," and the creation of Adam as the first man on earth, while there were many before him. Having arrived at this point, you will find it marvellously easy to destroy the dogma of the existence of God and the mission of angels to the prophets, and to substitute for all this our own truth—i.e., the eternity of the universe. The last step is the abolition of both Mohammed ben Ismaïl and Ismaïl, who are only the "gates" to knowledge.'

So far the doctrines of the I., who, doubtless, aimed—apart from an original desire of purifying and allegorizing Mohammedanism, and elevating it to a philosophical system—at political power. For the success in this of one of their principal branches, the Karmathians, see KARMA-THIANS. See Makrizi, Nowaïri, Silvestre de Sacy, *Religion des Druses*, etc.

ISMAIL PASHA, *îs-mâ-êl' pâ-shâ'*, or ISMAIL' I: Viceroy and Khedive of Egypt: see ISMAIL I.: EGYPT.

ISMUD', or ISMID, or IZMID: see NICOMEDIA.

ISNIK', or IZNECK: see NICÆA.

ISO, *î'sô* [Gr. *îsôs*, equal]: a prefix denoting *equality* or *similarity*; in *chem.*, denoting an isomeric body.

ISOBARIC, a. *î'sô-bâ'rîk* [Gr. *îsôs*, equal; *bârôs*, weight]: applied to lines which connect places on the surface of the earth having the same atmospheric pressure. ISOBARIC LINES: see ISOBAROMETRIC LINES.

ISOBAROMETRIC, a. *î'sô-bâr'ô-mêt'ric* [Gr. *îsôs*, equal, and Eng. *barometric*]: indicating equal barometric pressure.

ISOBRIOUS—ISOCRATES.

ISOBAROMETRIC LINES, called also **ISOBARIC LINES**, or **ISOBARS**, lines connecting on a map the places which exhibit the same mean difference between the monthly extremes of the barometer. These oscillations are greater in some countries, as Hindustan and Newfoundland, than in others, as w. Europe and the Antilles.

ISOBRIOUS, a. *ī-sō'brī-ūs* [Gr. *īśōs*, equal; *brīāō*, I strengthen]: in *bot.*, applied to the dicotyledons, because both cotyledons seem to be developed with equal force.

ISOBUTYL, n. *ī'sō-bū'tīl* [Gr. *īśōs*, equal; *bouturon*, butter; *ulē*, matter]: a compound body found in the volatile oil obtained from horse-radish.

ISOCHEIMAL, or **ISOCHIMAL**, a. *ī'sō-kī'māl*, or **I'so-chei'menal**, a. *-mē-nāl* [Gr. *īśōs*, equal; *cheima*, winter]: of the same winter temperature. **ISOCHEIMALS**, n. plu. *-māls*, or **ISOCHEIMAL LINES**, or **ISOCHEIMONAL LINES**, imaginary lines passing through places which have the same mean winter temperature: see **ISOTHERMAL LINES**.

ISOCHOMOUS, a. *ī-sōk'ō-mūs* [Gr. *īśōs*, equal, similar; *chōma*, a heap, a mound]: in *bot.*, applied to branches springing from the same plant, and at the same angle.

ISOCHROMATIC, a. *ī'sō-krō-māt'īk* [Gr. *īśōs*, equal; *chrōmā*, color]: having the same color.

ISOCHRONOUS, a. *ī-sōk'rō-nūs* [Gr. *īśōs*, equal; *chrōnōs*, time]: occurring in equal times, or at intervals of the same duration, as the beats of a pulse. **ISOCHRONISM**, n. *-nīzm*, the property of a pendulum by which it performs its vibrations in equal times, whether these vibrations be large or small; but a pendulum can possess this property only by being constrained to move in a cycloidal arc: see **CYCLOID**. This is managed by causing the string to wrap and unwrap itself round two equal cycloidal cheeks, the diameter of whose generating circle is equal to half the length of the pendulum. Isochronism is closely approximated in practice by causing the pendulum to describe a very small circular arc. **ISOCHRONON**, n. *-nōn*, clock designed to keep perfectly accurate time.

ISOCLINAL, a. *ī'sō-klī'nāl* [Gr. *īśōs*, equal; *klīnein*, to incline]: pertaining to or indicating equality of inclination or dip. **ISOCLINAL LINES**, imaginary lines on the earth's surface passing through places where the magnetic dip or inclination is the same: see **ISODYNAMIC LINES**.

ISOCRATES, *ī-sōk'ra-tēz*: one of the ten Attic orators, and a distinguished Greek writer: B.C. 436–B.C. 338; b. Athens; son of Theodorus, a citizen of some wealth. He had a weak voice, and much natural timidity, which shut him out from a political career; but he taught rhetoric, and wrote orations for others, for which he received large sums; and though he did not mingle in the strife of parties, he was earnestly interested in the cause of his country's independence and honor. The tradition (somewhat doubtful) is that the fatal battle of Chæroneia broke his heart, and that he refused food, and died after an abstinence of several days, in the 98th year of his age. He was a friend of

ISOCRYME—ISOLATE.

Plato. His school of rhetoric and allied arts, opened at Athens B.C. 392, had great celebrity throughout the ancient literary world. His orations, of which more than 20 are extant, are characterized by extreme carefulness and elegance of style, but are not to be compared with those of Demosthenes in fervor, or with those of Lysias in natural beauty and simplicity. The best modern editions are those of Lange (Halle, 1803), Ad. Coraes (Paris 1807), G. S. Dobson (Lond. 1828), and Baiter and Sauppe (Zürich 1839).

ISOCRYME, n. *ī'sō-krīm* [Gr. *īsōs*, equal; *krumōs*, cold]: a line laid down on a map or chart to mark the limits of equal extreme cold on the surface of the earth. **I'SOCRIMAL**, a. *-krī'māl*, pertaining to or indicating the limits of equal extreme cold.

ISODOMON, n. *ī-sōd'ō mōn* [Gr. *isōdōmōn*, built alike—from *īsōs*, equal; *dēmein*, to build]: a building in which the masonry was cut and squared to the same height, so that the courses of stone, when laid, were all regular and equal.

ISODYNAMIC, a. *ī'sō-dī-nām'ik* [Gr. *īsōs*, equal; *du-nāmis*, force]: having the same power or force; equal in power, and capable of producing the same results. **ISODYNAMIC**, **ISOCLINIC**, and **ISOGONIC LINES**; or lines of equal force, equal inclination and equal declination; three systems of lines, which being laid down on maps, represent the magnetism of the globe as exhibited at the earth's surface in three classes of phenomena, the varying intensity of the force, the varying dip or inclination of the needle, and its varying declination from the true meridian: see **MAGNETISM**.

ISOGEOTHERMAL, a. *ī'sō-jē-ō-thēr'māl* [Gr. *īsōs*, equal; *gē*, the earth; *thērmē*, heat]: applied to imaginary lines which connect those places on the earth's crust which have the same mean annual temperature—restricted to land only.

ISOGONIC, a. *ī'sō-gōn'ik* [Gr. *īsōs*, equal; *gōnīa*, an angle]: having equal angles—applied to imaginary lines passing through all places on the earth's surface at which the horizontal magnetic needle makes the same angle with the meridian: see **ISODYNAMIC LINES**.

ISOHYETOSE, a. *ī'sō-hī'ē-tōs* [Gr. *īsōs*, equal; *hūētōs*, rain]: applied to imaginary lines on the earth's surface connecting places which have the same mean annual fall of rain.

I'SOLA BEL'LA: see **BORROMEAN ISLANDS**.

ISOLA GROSSA, *ē'sō-lā grōs'sā*, or **ISOLA LUNGA**, *ē'sō-lā lōn'gā* (Great or Long Island): one of the many islands off the w. coast of Dalmatia, in the Adriatic Sea. It extends between 43° 51' and 44° 11' n. lat; greatest length, 27 m.; greatest breadth, 3 m.; pop. 12,000.

I'SOLA MA'DRE: see **BORROMEAN ISLANDS**.

ISOLATE, v. *ī'sō-lāt* [It. *isolato*, isolated, solitary—from It. *isolare*, to isolate: F. *isoler*, to detach—from L. *insulā*, an island—*lit.*, to place in an island]: to place in a detached

ISOMERIC—ISOMETRIC PERSPECTIVE.

situation; to insulate; to place by itself. I'SOLATING, imp. I'SOLATED, pp.: ADJ. detached; placed by itself or alone; detached. I'SOLA'TION, n. -lī'shūn [F.—L.]: state of being isolated or alone.

ISOMERIC, a. ī'sō-mēr'īk [Gr. *īśōs*, equal; *mērōs*, 'a part]: formed of the same elements in the same proportions, but having different physical and chemical properties, due to a different arrangement of the ultimate atoms. ISOMERISM, n. ī-sōm'ēr-īzm, identity in composition, but with difference of properties. ISOMERIDES, isomeric compounds: see ISOMERISM below. ISOM'EROUS, a. -ūs, in bot., applied to the organs of a flower, when each is composed of an equal number of parts.

ISOMERISM, quality of chemical compounds by which a few inorganic and a very large number of organic compounds exhibit different properties, chemical or physical, although identical in percentage composition. There are three sub-divisions. 1. Isomeric bodies are such as have identical composition, molecular weight, and almost identical chemical properties, but differ in physical properties. Thus the volatile oils of lemons, juniper, turpentine, and a large number of others have the same chemical formula $C_{10}H_{16}$, exhibit almost identical chemical reactions and are distinguished principally by their odor and by their action in polarized light. 2. Metameric bodies are such as possess the same composition and molecular weight and can be represented by the same formula, but which under the same treatment with chemical reagents give different compounds. Thus the empirical formula $C_3H_6O_2$ stands for (a) propionic acid, $C_3H_5O.OH$; (b) methyl acetate, $C_2H_5O.OCH_3$; and (c) Ethyl formate $CHO.OC_2H_5$. The three are distinguished by their chemical reactions when treated with a caustic alkali. 3. Polymeric bodies have the same percentage composition, but differ in molecular weight. The olefine series (C_nH_{2n}) show it, running upwards from the hypothetical methylene CH_2 by steps through C_2H_4 , C_3H_6 , and etc., to $C_{30}H_{60}$. The compound C_3H_4 is the well known olefiant gas; while the compound $C_{30}H_{60}$ is termed melene and is a solid melting at $143.6^\circ F$. Organic chemistry is to a great extent built upon polymeric series such as the above.

ISOMETRICAL, a. ī'sō-mēt'rī-kāl [Gr. *īśōs*, equal; *mēt-rōn*, a measure]: pertaining to or characterized by equality of measure.

ISOMETRIC PERSPECTIVE, in Mechanical Drawing a species of mechanical drawing in which three sides of an object are shown. Most mechanical structures can be referred to an including parallelopipedon. If a point be taken at or near the centre of a sheet of paper and three lines be drawn radiating therefrom, one vertical and downward, and two upward and oblique, making angles of 120° with each other, they may be taken as representing three edges of a parallelopipedon. The object to be drawn is referred to this. Its vertical dimensions are laid off on lines parallel to the front vertical. Its horizontal members

ISOMORPHISM.

on one side are laid off parallel to one of the oblique lines, and the corresponding members on the other side parallel to the other oblique line. Thus three faces of the object are seen. All dimensions parallel to the directing lines are on a true scale. Of the two side faces, the horizontal and vertical dimensions are given on a true scale, the diagonal dimensions being incorrect. It is a kind of false perspective that is easy to draw, and that has the great advantage of permitting the use of a true scale on certain controlling parts.

ISOMORPHISM, n. *ī'sō-mŏr'fĭsm* [Gr. *īśōs*, equal; *mŏrphē*, form, shape]: the capability shown by two or more simple or compound substances to crystallize in one and the same form, and to replace one another in a compound crystal: such generally possess similar chemical constitution. **ISOMORPHOUS**, a. *-fŭs*, of different chemical constitution, but possessing the same or similar crystalline forms.—*Isomorphism* strictly signifies similarity of form, but it is now restricted by chemists to substances not only similar in their crystalline form, but also analogous in their chemical composition. The diamond (C), magnetic oxide of iron (Fe_3O_4), and alum ($\text{AlK}(\text{SO}_4)_2, 12\text{H}_2\text{O}$), all crystallize in octohedra, but there is obviously no analogy in the chemical composition of these substances; on the other hand, the spinelle ruby (MgAl_2O_4), magnetic oxide of iron (Fe_3O_4), and chrome ore (FeCr_2O_4), not only crystallize in octohedra, but (as their formulæ show) are also analogous in their chemical composition. Hence, the members of the latter group are truly isomorphous in the restricted sense, while the members of the former group present only one of the conditions of chemical isomorphism. In most cases, however, as Mitscherlich (to whom we owe most of our knowledge of this subject) has shown, the chemical composition of substances that correspond in form is analogous; and that chemist has further endeavored to prove that crystalline form is independent of the chemical nature of the atoms, and that it is determined solely by their grouping and relative position; the same number of atoms combined in the same way always producing, as he asserts, the same crystalline form.

Miller, in his *Chemical Physics*, gives 15 groups in which the existence of isomorphism has been distinctly ascertained. From these we select three groups—one of elements, and two of compounds:

Arsenic
Antimony
Tellurium

Chloride of Potassium, $\cdot\text{KCl}$
Iodide of Potassium, KI
Bromide of Potassium, KBr
Fluoride of Potassium, KF

Alumina, Al_2O_3
Sesquioxide of Iron, Fe_2O_3
Sesquioxide of Chromium, $\cdot\text{Cr}_2\text{O}_3$
Sesquioxide of Manganese, Mn_2O_3

The discovery of the coincidence of similarity in crystalline form where the chemical composition also is similar,

ISONOMY—ISOTHERMAL LINES.

is the most important generalization yet arrived at in the science of crystallography; and in chemistry it has been of essential service in facilitating the classification of compounds, and in determining the combining numbers or atomic weights of the elementary bodies.

ISONOMY, n. *ī-sōn'ō-mī* [Gr. *īśōs*, equal; *nōmōs*, law]: equal law or rights. **ISONOMIC**, a. *ī'sō-nōm'īk*, the same or equal in law or right; one in kind or origin.

ISOPATHY, n. *ī-sōp'a-thī* [prefix, *iso-*; Gr. *pathos*, suffering]: in *med.*, the attempted cure of a disease by the virus of the same malady.

ISOPERIMETRICAL, a. *ī'sō-pēr'ī-mēt'rī-kāl* [Gr. *īśōs*, equal; *perī*, round; *mētrōn*, a measure]: of equal perimeter or circumference. **ISOPERIM'ETRY**, n. *-pēr-īm'ē-trī*, the science of figures having equal perimeters or boundaries.

ISOPOD, n. *ī'sō-pōd*, **ISOPODA**, plu. *ī-sōp'ō-dā* [Gr. *īśōs*, equal; *pōdēs*, feet]: order of malacostracous crustaceans, having all the legs alike; of the section *Edriophthalma* (q.v.), mostly aquatic—some marine, some inhabitants of fresh waters—but some terrestrial, inhabiting damp places, as the armadillo, woodlouse, etc. The body is flattened. The thorax consists of seven segments bearing seven pair of feet—six in the young before their first moulting. The females have usually large plates attached to the thoracic segments, meeting to form a pouch for the eggs and young.—The interesting fossils called *Trilobites* (q.v.) are supposed to be *Isopoda*, or nearly related to them. **ISOPODOUS**, a. *ī-sōp'ō-dūs*, equal-legged.

ISOPOLITY, n. *ī'sō-pōl'ī-tī* [Gr. *īśōs*, equal; *politei'a*, polity—from *polis*, a city]: equality of political rights.

ISOPYRE, n. *ī'sō-pīr* [Gr. *īśōs*, equal; *pur*, fire]: a mineral of a grayish or black color and of vitreous lustre like obsidian; a silicate of lime, iron, and alumina.

ISOSCELES, a. *ī-sōs'sē-lēz* [mid. L. *īśōscēlēs*, with equal legs—from Gr. *īśōs*, equal; *skēlōs*, a leg]: having equal sides or legs—applied to a triangle having two equal sides.

ISOSPOROUS, a. *ī-sōs'pō-rūs* [Gr. *īśōs*, equal; *spora*, a seed]: in *bot.*, applied to cryptogamic plants which produce a single kind of spore, as ferns.

ISOSTEMONOUS, a. *ī'sō-stēm'ō-nūs* [Gr. *īśōs*, equal; *stēmōn*, a thread or stem]: in *bot.*, applied to stamens and floral envelopes which have the same number of parts or multiples.

ISOTHERAL, a. *ī-sōth'ēr-āl* [Gr. *īśōs*, equal; *thērōs*, summer]: of the same mean summer temperature. **ISOTH'ERALS**, or **ISOTHERAL LINES**, system of lines showing the places on the earth's surface where the same mean summer temperature prevails: see **ISOTHERMAL LINES**.

ISOTHERMAL, a. *ī'sō-ther'māl* [Gr. *īśōs*, equal; *thērmē*, heat]: having the same temperature; of equal temperature.

ISOTHER'MAL LINES: lines on maps, connecting all places on the surface of the globe that have the same mean

ISOTHERMAL LINES.

temperature.—*Isothermal Lines* (q.v.) connect places of equal mean summer temperature.—*Isocheimonal Lines* connect places of equal mean winter temperature.—Alexander von Humboldt was the first to lay down these systems of lines on maps, 1817. Their importance in reference to climate, meteorology, and geographic distribution of plants and animals, is very great. If the whole surface of the earth were uniform, it is evident that I. L. would precisely correspond with the degrees of latitude, and there would be no isothermal and isocheimonal lines, as distinguished from the isothermal; but neither would the earth be habitable for man, or suitable for almost any of the animal or vegetable tribes which actually exist upon it. Isothermal, isothermal, and isocheimonal lines are therefore laid down altogether from observations recorded and compared. In laying them down, care must be taken to make allowance for the elevation of each place of observation above the level of the sea, they being all laid down as for that level. I. L. are named according to the mean temperature which they indicate, the line of 50° , the line of 60° , etc. They are far from corresponding with parallels of latitude, nor are they parallel with one another, but are curved in such a manner as to indicate two n. and two s. poles or centres of greatest cold. It is in the extra-tropical parts of the n. hemisphere that these curvatures are greatest. The n. poles of cold are situated in the arctic regions, one n. of Siberia, nearly in the meridian of Jakutsk; the other n. of America, nearly in the meridian of the most w. part of Hudson's Bay; and the I. L. throughout the greater part of the n. hemisphere descend to a lower latitude in e. Asia and in e. America than elsewhere, ascending, however, to a comparatively high latitude on the w. coasts of both the great continents. Thus, the line of 50° F., which passes through n. England and n. Ireland, and there reaches its most northern latitude, descends below the latitude of New York, on the e. coast of America. The distances of the I. L. are also remarkably various in different parts of the world. Thus, in the east of N. America, from Charleston to Labrador, the mean annual temperature varies more than a degree and a half for every degree of latitude; while in central Europe the variation is only about nine-tenths of a degree, and on the w. coasts of Europe still less.

The isothermal and isocheimonal lines are neither parallel among themselves nor with the I. L. and it is in this that a chief difference of continental and of insular climates appear, the summers of the former and the winters of the latter having comparatively large proportions of the heat of the year.

Another interesting system of lines relative to temperature has been laid down by Dr. Dove, which he calls *Isabnormal Lines*—the term, however, is objectionable, as formed from words of two languages—lines connecting places which have the same excess above or defect below the normal mean temperature of their latitude.—See CLIMATE: METEOROLOGY: TERRESTRIAL TEMPERATURE.

ISOTONIC—ISRAELITE.

ISOTONIC, a. *î'sō-tōn'ik* [Gr. *isōs*, equal; *tōnōs*, tone]: in *music*, having or indicating equal tones.

ISPAHÂN, *îs-pa-hân'* properly **ISFAHÂN**, *îs-fa-hân'*: famous city of Persia, cap. of the province of Irak-Ajemi, and formerly cap. of the entire country; on the Zenderud, in an extensive and fertile plain 226 m. s. of Tehran; lat. 32° 40' n. long. 51° 43' e. The Zenderud is here 600 ft. broad, and is crossed by three noble bridges, one of them 1,000 ft. in length, having 34 arches. Groves, orchards, avenues, and cultivated fields surround the city for miles; but the permanent beauty of the vicinity serves only to make the contrast more striking between the former splendor of the city and its present ruinous condition. Miles of street are now almost tenantless, and many of the palaces are deserted, and rapidly falling to decay. It is believed that less than a twentieth part of the area of the old city is now inhabited. In the *Chahar Bagh*, an extensive pleasure-ground s. of the city, is a palace called the *Chehel Sitton*, or 'Forty Columns,' formerly a favorite royal residence. Along the front of this palace is a double range of columns, each rising from the backs of four lions in white marble. The pillars are inlaid with mirrors, and the walls and roof are profusely decorated with glass and gilding. The suburb Julfa, on the s. bank of the river, formerly a flourishing Armenian settlement of 30,000 inhabitants, is now little better than a mass of ruins. I., however, is still an important city, and the seat of extensive manufactures, including all sorts of woven fabrics, from rich gold brocades and figured velvets to common calicoes. Trinkets and ornamental goods in great variety, with fire-arms, sword blades, glass, and earthenware, also are manufactured. Many of its bazaars are still crowded daily, and its merchants still have influence enough to affect prices in India. Of late years, too, I. has shown considerable signs of improvement; many of its edifices have been rebuilt; rice, an important article of commerce, is now largely cultivated in the neighborhood. Pop. (1891) 60,000.

I. was a trading town of importance, and the capital of Irak, under the caliphs of Bagdad. It was taken by Timûr 1387, when 70,000 of the inhabitants are said to have been massacred. During the 17th c., under Shah-Abbas the Great, it became the cap. of Persia, and reached the climax of its prosperity. Its walls were then 24 m. in circuit, and it is said to have had between 600,000 and 1,000,000 inhabitants. It was the emporium of the Asiatic world; the merchandise of all nations enriched its bazaars, and ambassadors from Europe and the East crowded its court. In 1722, it was devastated by the Afghans, and some time afterward the seat of government was transferred to Tehran (q.v.).

IS'RAEL (son of Isaac): see **JACOB**.

IS'RAEL, **KINGDOM OF**; also **IS'RAELITES**: see **JEWS**.

ISRAELITE, n. *îz'râ-êl-î't*: a descendant of *Israel* or Jacob; a Jew. **IS'RAELIT'IC**, adj. *-î't'ik*, or **ISRAELIT'ISH**, adj. *-î't'ish*, pertaining to Israel or to a Jew.

ISSOIRE—ISTALIF.

ISSOIRE, *ēs-svōār'* (anc. *Issiodurum*): town of France, dept. of Puy-de-Dôme, at the confluence of the Couze and Allier, 20 m. s.e. of Clermont. Pop. 7,000.

ISSOUDUN, *ēs-só-dǔng'*: manufacturing town of France, dept. of Indre, on the river Théolles, on the railway from Orleans to Limoges, 18 m. n.e. of Châteauroux. The chief manufactures are woolen cloth and yarn. Pop (1886) 12,697.

ISSUE, n. *ish'shū* [F. *issu*, born, sprung—from *issue*, issue, exit; Norm. F. *issir*, to go out—from L. *exire*, to go out: It. *uscire*, to go out, to spout]: the act of passing or flowing out; that which happens or turns out; end or ultimate result; children; offspring; a giving or sending out, as of bank-notes; giving out or delivering for use; the point in dispute in a suit at law; in *med.*, an artificially produced wound kept raw and open that there may be a constant flow of pus from the surface: V. to send out or forth; to put in circulation; to deliver for use; to flow or come out; to spring, as from a source; to proceed, as progeny; to end or terminate; to arise. **IS'SUING**, imp.: N. a flowing or passing out; a sending out, as of notes for circulation. **IS'SUED**, pp. *-shūd*: **ADJ.** descended. **IS'SUELESS**, a. *-shū-lēs*, childless. **IS'SUER**, n. *-ēr*, one who. **ISSUE PEA**, in *med.*, a pea or such like for maintaining the irritation in a wound and promoting the secretion of pus. **AT ISSUE**, in dispute; controverted; at variance. **TO JOIN ISSUE**, in *law*, to come to the point in dispute.—**SYN** of 'issue, v.': to proceed; spring; come out; pass out; break out; flow from; send out; send forth; emerge; close; end; terminate;—of 'issue. n.': exit; egress; passage out; event; consequence; termination; conclusion; sequel; progeny; vent.

ISSUE, in Law: (1) descendants of a common ancestor; or (2) in pleading, a point affirmed by one party in a suit and denied by the other. In the latter sense, an *actual I.* is one formed in an action regularly brought to try a question of right; a *collateral I.* is one formed on a matter only indirectly in the line of the pleading; a *feigned I.* is one formed in a fictitious action, under authority of a court, to try a question of fact before a jury; a *formal I.* is one formed according to the rules required by law; a *general I.* denies the whole declaration in direct terms; an *immaterial I.* is formed on some non-essential matter which will not determine the merits of the cause; an *informal I.* arises when a material allegation is improperly traversed; a *material I.* determines the merits of the cause when decided; a *special I.* is a single point selected by the defendant on which he rests his whole cause; a *common I.* is one formed on the plea of *non est factum* to an action of covenant broken.

ISSUS, *īs'sūs*: anciently seaport on the gulf of I. in Cilicia, Asia Minor, celebrated for a victory which Alexander the Great obtained over Darius B.C. 333, by which the camp and family of Darius fell into his hands. Its exact site has not been ascertained.

ISTALIF, *īs-ta-lēf*. town of Afghanistan, 22 m. n.w. of Cabul, on a tributary of the Cabul river. In 1842, it was

ISTER—IT.

partially destroyed by the British. Previous to that event, it had 15,000 inhabitants, employed chiefly in spinning, weaving, and dyeing cotton.

IS'TER: see DANUBE.

ISTHMUS, n. *is'mūs* or *ist-* [L. *isthmus*; Gr. *isthmos*; F. *isthme*]: neck of land uniting two larger portions together, or uniting a peninsula to the mainland. The name isthmus was by the ancients often employed without any addition to designate the Isthmus of Corinth, joining the Peloponnesus to continental Hellas. Here there was a famous temple of Neptune, and here also were celebrated Isthmian games. ISTH'MIAN, a. *-mī-ăn*, pertaining to an isthmus. ISTHMIAN GAMES, one of the four great national festivals of anc. Greece, celebrated on the Isthmus of Corinth at first every third year, and afterward every fifth year. They were said to have been instituted by Sisyphus, and restored by Theseus. The games, like those of Olympia, consisted of athletic exercises, with the addition of competitions in music and poetry. The victors were crowned with garlands of fir, and their statutes were placed in the temple of Neptune. Till the destruction of Corinth by the Roman general Mummius, B.C. 146, the management of these games was in the hands of the rulers of that city, though the Athenians always had the seats of honor. The Romans added the coarser and more brutal amusements of gladiatorial exhibitions and fights with wild beasts. The spread of Christianity was fatal to their popularity, though they continued during the reigns of Constantine and Julian. See GAME (ANCIENT GAMES—*references*). ISTHMUS CANALS: see INTEROCEANIC CANAL: SUEZ CANAL.

ISTRIA, *is'trī-a*: Austrian margraviate, which, with the county of Görz and Gradiska, and the town and territory of Trieste, forms the Austrian crown-land of the coast-districts of Kustenland. It consists of a peninsula projecting into the n.e. corner of the Adriatic Sea, together with the adjacent Quarnero Islands; 1,908 sq.m. The surface is mountainous with off-shoots from the Julian Alps. Two-thirds of the people are of Slavic race, and nearly one-third Italian.—I. was anciently inhabited by a tribe of Illyrian pirates, and resisted the Roman arms till B.C. 177. After the fall of the Western empire it formed a part of various kingdoms, till Austria acquired it 1797. In 1805 Austria was forced to yield it to France; but re-took it 1813, and has held it since. Pop. (1890) 317,610.

ISVORNIK': see ZVORNIK.

ĪSWARA, *ēs'wa-ra*: [from the Sanskrit, *is'*, to possess power, hence literally *lord*]: epithet applied to different Hindu divinities, but in mythological acceptation mostly designates SIVA (q.v.).

IT, pron. *it* [AS. *hit*; Dut. *het*; Icel. *hitt*; L. *id*]: the pron. of the 3d pers. sing. neut. nom. or obj.; the thing already spoken of. ITS, *its*, the poss. case of it. ITSELF', the neut. reciprocal pron. *Note*.—*It* in a sentence stands instead of, and refers to, a place, animal, thing, quality, or

ITACOLUMITE—ITALIAN ARCHITECTURE.

clause, but often to nothing definite, as, *it rains*; *it* refers to a person, in the phrase 'it is I.'

ITACOLUMITE, *it-a-köl'ũ-mīt*: rock found in Brazil, the Ural Mountains, Ga., N. C., and S. C., and named from the Itacolumi Mountain peaks of Brazil; sometimes called flexible sandstone. It is silicious, granulated, and laminated, generally found with talcose slates, is rendered flexible by the admixture of mica, and is of undoubted sedimentary origin. When discovered in gold regions, diamonds will be found frequently in close proximity.

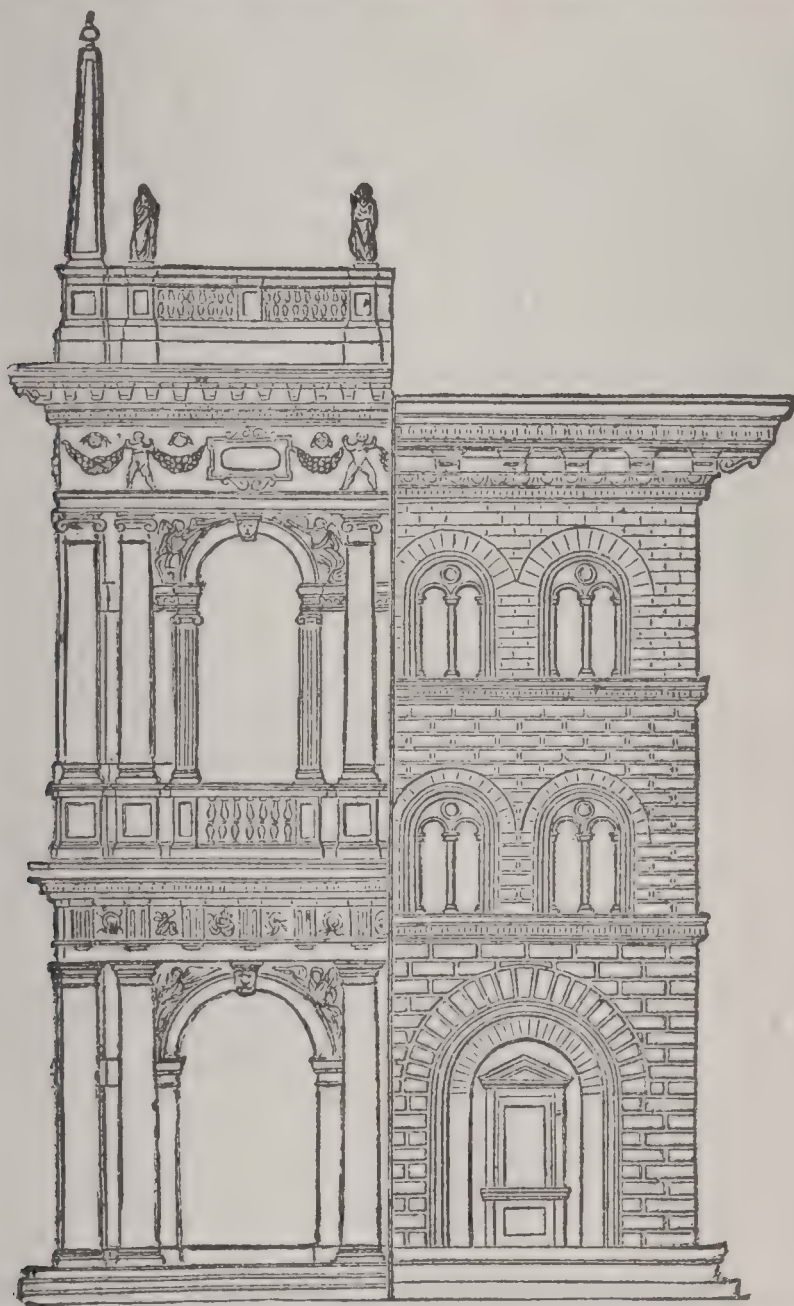
ITAKA-WOOD, n. *it'a-ka wūd* [Guiana name of the tree]: in *bot.* and *com.*, a kind of wood with black or brown streaks much used in cabinet work. It comes from *Machærium Schomburgkii*, a papilionaceous tree, tribe *Dalbergiæ*, growing in Guiana.

ITALIAN, a. *ĩ-tāl'yǎn* [L. *Itālĭā*, Italy]: pertaining to Italy. N. a native of Italy, or its language. **ITAL'IANIZE**, v. *-yǎn-ĩz*, to make Italian in manners or habits; to speak Italian or play the Italian. **ITAL'IANIZING**, imp. **ITAL'IANIZED**, pp. *-ĩzd*. **ITALIC**, a. *ĩ-tāl'ík*, pertaining to Italy or its language; denoting a certain variety of type. **ITALICS**, n. plu. *ĩ-tāl'íks* [F. *italique*, applied to types—from L. *Itālĭcus*, of or belonging to Italy]: a sloping sort of types or letters, invented and used first by the Venetian printer Aldus, 1501. **ITALIC VERSION** (*Vetus Itala*), a translation or translations of the Scriptures into Latin, which preceded the Vulgate (q.v.); dating probably from the middle of the 2d c., and in use till the time of Jerome. The Old Testament portion was made, not from the Hebrew, but from the Septuagint. The *Itala* was made for use in Italy, where a higher culture prevailed, which was offended by the Old Latin version (*Vetus Latina*) with its degenerate Latin and its many provincialisms and colloquialisms. **ITAL'ICIZE**, v. *-ĩ-sĩz*, to write or print in italics. **ITAL'ICIZING**, imp. **ITAL'ICIZED**, pp. *-sĩzd*. **ITAL'ICISM**, n. *-ĩ-sĩzm*, an Italian phrase or idiom. **ITALIAN-IRON**, an instrument, when heated, used for fluting and smoothing frills, etc., by laundresses. **ITALIAN WAREHOUSEMAN**, a vender of macaroni, vermicelli, dried fruits, olive-oil, and the like.

ITAL'IAN AR'CHITECTURE: term usually limited to the style practiced by the Italian architects of the 15th, 16th, and 17th c., and which has since been adopted in every country in Europe. This style originated in a revival of the ancient architecture of Rome. Although Gothic architecture had been practiced in Italy during the 13th and 14th c., it had never been thoroughly naturalized. The Italians always showed a preference for the round arch over the pointed northern form; and even in their buildings in the pointed style, there is a certain simplicity and largeness of parts indicative of a classic feeling. As early as 1350, Giovanni Pisano, in the beautiful sculpture of the pulpit at Pisa, showed a return to the ancient models. Arnolpho di Lapo built the cathedral of Florence (1290–1300), and in his design proposed a great dome (a remarkably Roman feature) over the crossing of the nave and transept.

ITALIAN ARCHITECTURE.

This he did not live to complete; but he prepared the way for Brunelleschi, the chief aim of whose life was the accomplishment of the great dome of the cathedral. He went to Rome to study the ancient buildings there, at that time neglected and hardly known to the Italians themselves. After giving considerable time to these monuments, he



Library of St. Mark's, Venice,
by Sansovino.

Ricardi Palace, Florence,
by Michelozzo.

returned to Florence, and, after great opposition, succeeded in carrying out the construction of the dome as it now stands. From this time the revival of Roman architecture went on rapidly. It was encouraged by the popes and other princes of Italy; and the invention of the printing-press soon spread a knowledge of the works of the Italian architects over Europe. At first, the Roman moldings and ornaments were copied and applied to the existing forms. As the ancient style became better understood, its general principles were gradually adopted, until at length the Modern

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Italian style was formed. This style may be defined as ancient Roman architecture applied to the forms and requirements of modern buildings. It has been admirably applied to domestic, but it has never been so successfully used in ecclesiastical edifices. The domes of the Italian churches render the interiors of these buildings very impressive, and are a feature for whose introduction into w. Europe, we are indebted to this style; but the façades of the churches are broken up into stories, and lack the unity of a Gothic front.

Italian architecture is divided into three styles or schools according to the places where it was practiced—viz., the Florentine, Roman, and Venetian. The Florentine buildings are massive and grand in effect; they are indebted to ancient Roman art for details chiefly, the outlines being the same as those of the older buildings, formed to suit the requirements of the place. Florence being a turbulent city, every man who had anything to lose had literally to make his house his castle. Accordingly, the basement floor is massively built with large blocks of stone, and the windows are small and plain. The Roman school naturally resembles more closely the ancient Roman buildings so numerous in that city—pilasters, arcades, etc., being freely used. In Rome, the plan of including two or more stories in one *order* of columns or pilasters with their entablature, with an attic or low story above, originated, and was afterward extensively, but, as already explained, not with entire success, applied to churches.

The Venetian style is, as might be expected in a city long accustomed to elegant palaces, the most ornate and picturesque of the Italian schools. Venice is crowded with specimens of all kinds from the earliest to the latest renaissance, and retains its individuality of style from first to last. Each story is marked by a separate tier of columns or pilasters with their entablature; the windows are arched and ornamented with columns, and the spandrils commonly filled with figures. The outline is varied in form, and is usually finished with a balustrade, broken by pedestals, and crowned with sculptured figures. It is from this most picturesque of the styles of the Italian renaissance that the other countries of Europe derived their peculiar forms. See RENAISSANCE: ELIZABETHAN: CINQUE-CENTO: PAL-LADIO.

ITALIAN LANGUAGE AND LITERATURE: *see* ITALY.

ITALY.

ITALY, *it'a-ly*: kingdom in s. central Europe, comprising the whole of the great Mediterranean peninsula extending s. from the Alps (excepting the small republic of San Marino, q.v.), together with Sicily, Sardinia, and some smaller islands. The length of this peninsula is 710 m.; extreme breadth 351 m., minimum 20 m., average 90-100 m. The following table gives the official figures for area and pop. (1881 and estimated pop. 1889). The Italian Milit. Geographical Institute reduced the area (1884) to 110,657 sq. m. There were 60,000 foreigners in Italy. More than 1,168,000 Italians left the country 1868-78. Italians are numerous in France and parts of Austria, in Tunis and Egypt, in the United States, and especially in Mexico, Brazil, and the La Plata States. The emigration to the United States has very largely increased since 1878; in 1889 there were 25,307 arrivals from I. and Sicily, and 1890 an increase of 26,696, or 52,003; multitudes of Italian laborers are now employed in this country on public works, in the building of railroads, etc. The minor administrative divisions are called provinces; the groups of provinces, *compartimenti*.

Provinces and Compartimenti.	Area in Sq. Miles.	Population, 1901.
1. Alessandria.....	1,950	811,833
2. Cuneo.....	2,282	638,235
3. Novara.....	2,553	743,115
4. Turin.....	3,955	1,124,218
Piedmont.....	11,340	3,317,401
5. Genoa.....	1,582	934,627
6. Porto Maurizio.....	455	142,846
Liguria.....	2,037	1,077,473
7. Bergamo.....	1,098	459,594
8. Brescia.....	1,845	538,427
9. Como.....	1,091	580,214
10. Cremona.....	695	327,838
11. Mantua.....	912	311,942
12. Milan.....	1,223	1,442,179
13. Pavia.....	1,290	496,969
14. Sondrio.....	1,232	125,565
Lombardy.....	9,386	4,282,728
15. Belluno.....	1,293	192,800
16. Padua.....	823	443,227
17. Rovigo.....	685	221,904
18. Treviso.....	960	412,267
19. Udine.....	2,541	592,592
20. Venice.....	934	401,241
21. Verona.....	1,168	422,427
22. Vicenza.....	1,052	447,999
Venice.....	9,476	3,134,467
23. Bologna.....	1,448	527,367
24. Ferrara.....	1,012	271,776
25. Forli.....	725	280,823
26. Modena.....	987	315,804
27. Parma.....	1,250	294,159
28. Piacenza.....	954	245,126
29. Ravenna.....	715	235,485
30. Reggio Emilia.....	876	274,495
Emilia.....	7,967	2,445,035

ITALY.

Provinces and Compartimenti.	Area in Sq. Miles.	Population, 1901.
31. Arezzo.....	1,273	271,676
32. Florence.....	2,265	939,054
33. Grosseto.....	1,738	144,722
34. Leghorn.....	133	123,877
35. Lucca.....	558	319,523
36. Massa and Carrara.....	687	195,631
37. Pisa.....	1,179	320,829
38. Siena.....	1,471	233,830
Tuscany.....	9,304	2,549,142
39. Ancona.....	762	302,172
40. Ascoli Piceno.....	796	245,172
41. Macerata.....	1,087	259,429
42. Pesaro and Urbino.....	1,118	253,982
Marches.....	3,763	1,060,755
43. Perugia (Umbria).....	3,748	667,210
44. Rome.....	4,663	1,196,909
45. Aquila degli Abruzzi.....	2,484	396,629
46. Campobasso.....	1,691	366,571
47. Chieti.....	1,138	370,907
48. Teramo.....	1,067	307,444
Abruzzi and Molise.....	6,380	1,441,551
49. Avellino.....	1,172	402,425
50. Benevento.....	818	256,504
51. Caserta.....	2,033	785,357
52. Naples.....	350	1,151,834
53. Salerno.....	1,916	564,328
Campania.....	6,289	3,160,448
54. Bari.....	2,065	827,698
55. Foggia.....	2,688	425,450
56. Lecce.....	2,623	706,520
Apulia.....	7,376	1,959,668
57. Potenza (Basilicata).....	3,845	490,705
58. Catanzaro.....	2,030	476,705
59. Cosenza.....	2,568	465,267
60. Reggio di Calabria.....	1,221	428,714
Calabria.....	5,819	1,370,208
61. Caltanissetta.....	1,263	327,977
62. Catanlo.....	1,917	705,412
63. Girgenti.....	1,172	371,638
64. Messina.....	1,246	543,809
65. Palermo.....	1,948	785,357
66. Syracuse.....	1,442	427,507
67. Trapani.....	948	368,099
Sicily.....	9,936	3,529,799
68. Cagliari.....	5,204	483,548
69. Sassari.....	4,090	308,206
Sardinia.....	9,294	791,754
Total.....	110,623	32,475,253

Cities with pop. exceeding 200,000 (1901) : Naples, 463,172; Milan, 295,543; Rome, 273,268; Turin, 230,183; Palermo, 205,710; esti. (1889) : Naples, 481,000; Milan, 380,000; Rome, 374,000; Turin, 282,000; Palermo, 225,000.

Physical Aspect.—The physical aspect of the Italian peninsula is diversified in the extreme. (For the islands, see SARDINIA and SICILY.) Northern I. is mostly one great plain—the basin of the Po, comprising all Lombardy and a considerable portion of Piedmont and Venice, bounded

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on the n.w. and partly on the s. by different Alpine ranges. Throughout central I., the great Apennine chain gives a picturesque irregularity to the physical configuration of the country, which in the s. extremity of I. assumes still wilder forms. In the highland districts of Naples, in which the Apennine ridge reaches its maximum elevation (10,000 ft.), the scenery exhibits a savage grandeur. Along the extensive coast-plains, as well as in the sub-Apennine valleys, the rural charms of this portion of I. are extreme, while the brilliant flora and vegetation impart to it a surprising beauty. The chief mountain-system of I. is the frontier ridge of the Alps (q.v.), and its noble continuation, the Apennines (q.v.).

Volcanic Zone.—I. comprises likewise a considerable stretch of volcanic zone, which traverses the peninsula from the centre to the s. parallel with the Apennines, and of which the most remarkable active summits are Vesuvius, near Naples; Etna, in Sicily; and Stromboli, in the Lipari Isles.

Plains.—The great plains of I. are those of Lombardy, from the Mincio to the Ticino and the Po; of Piedmont; the Venetian plains; plain of the Roman legations; plain of the *Campo Felice*, on which stands Vesuvius; the Apulian plain; the long, narrow Neapolitan plain of the Basilicata, 100 m. in length and 24 m. in breadth along the Gulf of Tarento.

Rivers.—The great majority of the rivers are navigable only for small coasting boats or barges. By far the most important is the Po (q.v.), which rises on the borders of France, and flows into the Adriatic: it has numerous tributaries. Among the others are the Adige, Brenta, Piave, Tagliamento, Aterno, Sangro, Metauro, Ofanto, Bradano, also belonging to the Adriatic basin; the Arno, the Tiber, the Ombrone, the Garigliano, and the Volturno, which belong to the Mediterranean basin. The classical and historical associations of many of the Italian streams, even though mere rivulets, invest them with perennial interest.

Canal System.—The canal system is most extensive in the north. Nine principal canals in Lombardy irrigate the plains, and give commercial communication, contributing much to the prosperity of the district. The *Naviglio Grande*, or Ticinello, is the finest hydraulic construction in I.; it communicates between the Ticino and Milan, and has a course of 28 m. navigable for vessels of large size. It was begun 1179. The *Naviglio Martesana*, 38 m. long, connects Concesa, on the Adda, with Milan; the *Naviglio di Pavia* is 18 m. in length; the bifurcated *Naviglio d'Ostiglia* unites the Po with the Adige. 253 canals intersect Piedmont, with a length of 1,932 kilometres. Venice comprises 203 navigable and 40 minor canals. The total length of navigable canals was (1885) 435 m. Numerous canals have been constructed for drainage of the Pontine marshes. This system of water-communication was early carried to a high degree of efficiency in I., and is of incalculable service in the agricultural districts.

Lakes.—The mountain lakes of I. are famed for pictur-

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esque beauty. They are mostly in the n. provinces of Lombardy and Venetia. The principal are Maggiore, Lugano, Como, Iseo, and Garda. The Roman lakes of Perugia, Bolseno, and Bracciano, that of Castiglione in Tuscany, and Celano in Naples also are notable.

Springs.—The mineral and thermal springs are innumerable, and possess a great variety of curative and sanitary properties.

Climate.—In the n. provinces, the climate is temperate, salubrious, and frequently severe in winter; in the centre, it assumes a more genial and sunny character; while the heat of the s. extremity is almost tropical. The singular clearness of the atmosphere sets off the landscape and monumental beauties of I. with brilliant effect. The drawbacks of I.'s climate are the piercing tramontana or mountain winds; the deadly sirocco, which blights all nature at seasons along the w. coast; and the malaria or noxious miasmata which issue from the Maremma of Tuscany, the Pontine Marshes, and the Venetian lagoons, generating pestilential fevers and aguish diseases in the summer season. The mean temperature of the leading divisions of the country through a whole year was as follows: Milan, 55° 4' F.; Rome, 59°; Palermo, 62° 5'; in Sardinia, 60° 5'. The highest temperature at Rome is 95°, and in Sicily 97° to 104°.

Products.—The staple products of I. are grain, wine, oil, raw silk, rice, olives, and fruits, besides hemp, flax, cotton, which are largely grown, and even the sugar-cane is successfully cultivated in Sicily and the south. Of the entire area, 87 per cent. is productive, and nearly half of this portion is under cultivation. The cultivable land is being increased annually both by deforesting and reclamation. The n. provinces or great plains, Tuscany, and the islands of Sardinia and Sicily furnish most of the grain. The minor alimentary products are beans, pease, Indian corn, lupines, and chestnuts, which are largely used. The wines of I. are very numerous, but, owing to the defective mode of their manufacture, are mostly unfit for exportation, as they neither bear transport nor improve by age. The wines of Naples are esteemed the best, small quantities of the famous *Lacrima Christi* and the *Vino d'Asti* being exported, while the Sicilian wines of Marsala are a considerable article of export. Vineyards occupy 7,650,000 acres, and the production of wine was (1900) nearly 700,000,000 gallons. Oil and olives are furnished by Tuscany, Lucca, and Naples. Silk is manufactured chiefly in the n. provinces, the cultivation of the mulberry and the rearing of the silk-worm forming in Lombardy a principal occupation of the people. In Lombardy alone, more than 17,000,000 mulberry-trees are required to furnish food for silk-worms; and the silk exported from the Lombardo-Venetian provinces alone yields an annual revenue estimated at about \$25,000,000. The best manufactured silk comes from Piedmont, Tuscany, and the Roman provinces. The cotton-plant is grown extensively in Sic-

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ily, and yields annually about 2,000,000 lbs.; it is manufactured in the native looms of Tuscany, Piedmont, Lombardy, and Rome. The fruits of Sicily and the south are exquisite in flavor, and include several tropical species. Oranges, lemons, almonds, figs, dates, melons, and the pistachio nut are common in orchards, and are largely exported. Considerable cheese-trade exists in the n. provinces, that of Lombardy alone yielding a revenue of more than \$10,000,000. I. furnishes also various valuable substances such as sulphur, alum, etc. All the domestic animals of w. Europe are found in I., besides buffaloes and camels. The fauna includes most of the British species, besides the wolf, lynx, boar, marmot, vulture, ibis, flamingo, and pelican. On the coast of the s. provinces are many species of African water-fowl. The *ortolano* and *beccafico* are small birds, esteemed for their flavor. The nocturnal fireflies are a remarkable feature of insect life.

Fisheries.—The sea and fresh-water fisheries are considerable; the Mediterranean furnishing immense quantities of tunny, anchovies, sardines, mullet, pilchards, and mackerel. The export of anchovies and sardines is of vast extent. The river-fisheries yield salmon, trout, sturgeon, lampreys, tench, and barbel, etc.; and the lagoons contain excellently flavored eels. See COMACCHIO. The crustaceans and shell fish are excellent.

Commerce.—Among the exports are raw silk, rice, fish, fruits of various kinds, marble, alabaster, sulphur, alum, silks, velvets, cloth of gold and silver, perfumes, mosaics in stone and wood, carvings in wood, macaroni and similar culinary pastes, porcelain, majolica, preserved fruits and meats, musical instruments, jewelry, and objects of art. Some chief articles of export are olive-oil and hemp, oranges and lemons, chemical products, shumac, and wine; of import, especially from Britain, cottons, iron, coal, and woolens —The imports 1894 were, in round numbers, excluding gold and coined silver, \$218,900,000, and the exports \$205,300,000. The imports of the precious metals for the same period were \$21,620,000, and the exports \$6,303,000. The merchant navy comprised 6,231 sailing-vessels and 328 steam-vessels; total, 16,559. The entrances at all ports were 104,591 Italian and 10,606 foreign vessels; in all, 115,197 vessels of 23,038,182 tons. The clearances were 103,182 Italian and 10,801 foreign vessels; in all, 113,983 vessels of 28,215,422 tons. The most important seaports are Genoa, Savona, Leghorn, Naples, Venice, Messina, and Palermo. There were 129 light-houses along the coast, of which 16 were of the first class.

Army and Navy.—The effective milit. strength officially returned 1894, July 1, was: permanent army, 252,829 officers and men 'with the colors,' 588,364 on furlough; militia, mobile 515,806, territorial 2,078,608. The navy consisted of 6 first-class battle-ships, 4 second-class, 4 port defense ships; 5 first-class, 17 second-class, and 39 third-class cruisers; 98 first-class, 4 second-class, and 37 third-class torpedo-craft; total, 214. There were 23 naval vessels of

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various kinds being constructed. The personnel of the navy consisted of 725 naval officers, 905 engineer and other officers, 1,124 pilots, etc., 5,592 sailors, 2,559 gunners, 1,400 mechanics, and 3,035 stokers, etc., while 3,286 men were employed along the coast; total, 35,607 officers and men. There are torpedo-stations all round the Italian coast, the head stations being at Spezia, Maddalena, Gaeta, Messina, Taranto, Ancona, and Venice.

Finances.—In 1899 the capital of the consolidated and redeemable debt amounted to \$2,365,446,340. There are 3 banks authorized to issue notes, but there is no national bank in Italy.

Railways, etc.—In 1901 Italy had 9,852 m. of steam or electric road in operation, beside many m. in construction, and in 1900 there were 27,918 m. of telegraph.

Religion.—Religious freedom is secured to all creeds, but the Rom. Cath. is the state religion. There were (1881) about 62,000 Protestants and 38,000 Jews. The Rom. Cath. Church has 51 abps., 223 bps., and more than 76,500 priests. The rank and dignity of the pope, as a sovereign prince, are recognized by the law of 1871, which defines the relations of church and state. A majority of the religious houses have been suppressed (small pensions being paid to most of their inmates who had taken vows), their property confiscated, and the proceeds applied by the govt. to educational purposes.

Education.—Primary education is compulsory. In 1886 there were 46,073 elementary schools, with 2,252,898 pupils; 7,555 private elementary schools; 2,139 asylums for children, with 252,763 inmates; 5,886 Sunday-schools, with 169,609 pupils enrolled; and 133 normal schools, with 10,542 pupils. In 1888 there were 728 gymnasiums, with 49,980 scholars; 321 lyceums, with 13,688 pupils; 481 technical schools, 34,602 students; 23 marine schools; 21 universities; and 22 collegiate and superior special schools. In 1891 there was expended for elementary instruction alone over \$12,640,000, the state contributing \$1,097,000.

History.—For the ancient history of I. see ROME: also ETRURIA: UMBRIA: ETC. At the dawn of modern history, the Western Roman Empire fell before a mixed horde of barbarous mercenaries composed chiefly of the Heruli, who proclaimed their leader, Odoacer, king of Italy, 476. After 13 years of military despotism, he was slain, and his followers were vanquished by the Ostrogoths, led by their great king, Theodoric. The Ostrogoths (see GOTHS), in their turn, were vanquished (552); and I. was then governed by an *exarch*, or delegate of the emperor of Constantinople, whose seat was Ravenna. Narses, the first exarch, having been disgraced, in revenge invited the Lombards to invade Italy (568); and under their rule the ancient political system of n. Italy was superseded by the introduction of feudal and Teutonic institutions. The Lombards, in their turn, were conquered by Pepin (754) and Charlemagne (774), the latter of whom was crowned emperor of Italy. The Lombards, however, retained the

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great duchies of Benevento, Spoleto, etc., till the advent of the Normans. In 842. the Saracens invaded I., and took possession of many important places on the s. coast, which they held till 1016, when they were driven out by the Normans. On the fall of the Carolingian dynasty (888), the crown of Italy fell to Berengarius I., chief of the Friuli, whose descendant, Berengarius II., did homage to Otho I. of Germany as his lord-paramount (951); and in 961, Otho deposed his vassal, and assumed sovereign rights over the Italian kingdom. From this period, the chief towns of Italy rapidly emerged from their previous insignificance. A foremost object of Otho and his successors was the abasement of the papacy; and for a time these emperors successfully arrogated to themselves the right of nominating to the chair of St. Peter the candidate most attached to imperial rule. The accession of Konrad was the signal for various tumultuous risings of the Italians against their German rulers, who had become the object of general detestation. Important feudal modifications during this reign tended still further to weaken the great feudal lords, and to exalt the inferior vassals and citizens. Under the reign of his successor, Henry III., we find the spirit of association, alike for offense or defense, waxing strong in Italy. The aggrandizement of the great Guelphic House of Este (q.v.), the bloody wars of the Investiture (q.v.), and the establishment of an ameliorated form of municipal government (1100) were the three most notable events under the Franconian dynasty.

Under the Hohenstaufen dynasty, Italy had an interregnum from foreign rule of about 60 years, which, however, was wasted in suicidal conflicts between the two factions, Guelphs and Ghibellines. The most terrible incident of this period was the massacre at the Sicilian Vespers (q.v.). Notwithstanding the inveterate internecine feuds of Italy, it was a period of great splendor and prosperity. The free cities or republics of Italy rivalled kingdoms in the extent and importance of their commerce and manufactures, the advancement of art and science, the magnificence of their public edifices and monuments, and the prodigious individual and national wealth to which they attained. Unhappily, a spirit of rivalry and intolerance grew up during this period of mediæval splendor; and in the arbitrary attempt of these states to secure supremacy over each other, they gradually worked their own destruction.

From the Sicilian Vespers (1282) to the reign of Henry VII. (1308), the chief historical incidents were the war between Genoa and Pisa, ending in the abasement and ultimate decline of Pisa (1284); the quarrels of the Guelphic factions, the Bianchi and the Neri, in Tuscany; the papal efforts for their reconciliation (1301); the residence of the popes at Avignon (1304-77); and the rise into importance of the oligarchic republic of Venice (1311). During the first half of the 14th c., the German emperors made several fruitless attempts to regain political supremacy in I.; but in 1355, Emperor Charles IV. gave up the struggle.

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The tyrannical rule of several petty tyrants, of which the foremost were the Visconti or lords of Milan, replaced that of the emperors. From the middle of the 14th c. to the end of the 15th, the collective history of I. is intermitted, each city being ruled by some powerful local family—e.g., Verona by the Della Scala, Padua by the Carrara, Ferrara by the Este families, and Mantua by the illustrious princes of Gonzaga; Milan by the Della Torre, Visconti, and Sforza families. See also GENOA: PISA: FLORENCE: VENICE: NAPLES: ETC.

From 1495 to 1525, I. was the theatre of the sanguinary struggles between France, the native rulers, and the Hapsburgs: but the battle of Pavia (1525) thoroughly established the ascendancy of the German emperor, who appointed over the various states rulers of his own selection. During the 17th c., no events of note mark the history of I.; the country being at peace, the various states pursued commercial traffic and industry, as far as their decreased limits permitted. In the following century, some territorial changes were effected during the war of the Spanish Succession. In 1793, I. partially entered the European coalition against France, whose arms, however, under Napoleon proved victorious. By the treaty of Campo Formio, 1797, Oct. 17, the entire state of Venice was transferred to Austria, while the rest of the country, under various designations, became for the most part a dependency of France. In this anomalous condition it remained during the rule of Napoleon. After the battle of Waterloo, the final reconstitution of I. was decreed as follows by the Congress of Vienna: the kingdom of Sardinia reverted to the House of Savoy, to which were added all the provinces of the Genoese republic; the Lombardo-Venetian kingdom fell to Austria; the principalities of Modena, Reggio, and Mirandola, to which were soon annexed Massa and Carrara, were restored to the family of Este; Lucca was created a duchy for the rightful Duke of Parma, whose hereditary state was conferred on Maria Louisa, ex-empress of the French; the duchy of Tuscany was restored to the Austro-Lorraine dynasty; the Papal States to the pope; the kingdom of Naples to the Bourbons; while the petty state of San Marino was allowed to retain its republican form; and Monaco remained an independent principality under the Prince of Valentinois.

By the Congress of Vienna, 1814, I. was again cast at the feet of the papacy and of Austria, and this at a period when progressive aspirations were strongly reawakened in the Italian people. The system of resolute oppression adopted by the reinstated rulers speedily produced irreconcilable hostility between themselves and their subjects, and a network of secret societies for the organization of national resistance spread throughout the land. The first-fruits of their organization were the risings of 1820, 21 in Piedmont and Naples, to demand constitutional rights. Austrian intervention quelled both these movements; and, 1831, when a similar rising occurred in Modena and the Roman states, it was subdued with sanguinary ferocity by

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an Austrian army. In these movements no distinct tendency toward national unity is perceptible; and only on the accession of Charles Albert to the throne of Piedmont (1831) was this grand idea of modern I. propounded by Joseph Mazzini, in an address to the king, urging him to assume the rôle of liberator and leader of Italy. The king of Piedmont, by yielding in some degree to the spirit of his time, prepared for Piedmont pre-eminence throughout the country. The accession of Pope Pius IX., 1846, seemed the inauguration of a new era for I.: a general amnesty was followed by wise, liberal measures, which were adopted also by Tuscany and Piedmont, in emulation of Rome. Naples and the other states resolutely refused every measure of reform, and by a simultaneous outbreak in Sicily and Milan in January, the great revolution of 1848 began in Italy. The revolution of France in February imparted a strong impulse to that of I., and speedily Naples, Piedmont, and Rome conceded constitutional rights to the popular demands. The Milanese unanimously revolted against Austrian rule Mar. 17, and, after five days of heroic fighting, the Austrians were expelled from the city, and Radetsky, with 70,000 troops, compelled to retreat from its walls. Mar. 29, Charles Albert entered Lombardy avowed champion of Italian independence, and leader of the national struggle. All the sovereigns of I. contributed their best troops for the war; and on the Roman volunteers setting out for Lombardy, the pope himself in public pronounced a solemn benediction on their banners.

But ere a month had elapsed, Pius IX. suddenly halted in his career of liberator of Italy, and, abandoning the national cause, launched (Apr. 19) a severe censure against 'this unjust and hurtful war,' which, chiefly by his own benediction, had been consecrated in the eyes of at least the more ignorant of the people. The recall of the Neapolitan troops was the first-fruits of the encyclical letter, which may be considered the tocsin of the subsequent fierce reaction through all Italy. For a time, however, the revolution made way; at the close of the year Rome became agitated; the pope fled to Gaeta; and Feb. 8, the Roman Republic was proclaimed, under the presidency of Mazzini. On the same day the Grand Duke of Tuscany abandoned his state. Piedmont again assumed the lead, but the disastrous battle of Novara (Mar. 23) finished the national Italian war of 1848. The treacherous French expedition against the Roman republic, and the return of the pope 1850, were the concluding acts of this revolution.

The reaction was complete and merciless in every state save Piedmont, the king of which kept faith with his subjects, and observed the constitutional forms conceded 1848. Austrian troops exercised a crushing tyranny, and from time to time Europe shuddered at the recital of the dark cruelties practiced in the dungeons of Naples and Rome. In the Congress of Paris, at the close of the Russian war (1856), Cavour (q.v.) forcibly exposed the unavoidable dangers of a continuance of Austrian and papal misrule. He strongly urged the expediency of a withdrawal of French

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and Austrian troops from Rome and the legations. In the beginning of 1859, King Victor Emanuel proclaimed from the Sardinian parliament his intention of actively aiding in the deliverance of the oppressed Italian population from the yoke of Austria. Toward the close of the year, Sardinia and France jointly prepared for war with Austria, and 1859, Apr., the war commenced. The victories of Magenta and Solferino were quickly followed by the abrupt and inconclusive peace of Villafranca, 1859, July 11, by which a confederation of the Italian states with the papal protectorate was proposed as the best solution of I.'s difficulties. The whole of I. energetically rejected the scheme; and early in 1860 the various states whose sovereigns were in flight from the Lombard campaign voluntarily declared in favor of annexation to the kingdom of Piedmont. 1860, Mar. 18, Parma, Modena, and the Emilian provinces were incorporated with Sardinia; and the grand duchy of Tuscany on the 22d. Mar. 17, the law by which Victor Emmanuel assumed the title of King of Italy was promulgated amid universal rejoicings. Mar. 24, the provinces of Nice and Savoy were ceded to France. May 5, Garibaldi, with about a thousand volunteers, set sail from Genoa for Sicily, where a revolutionary outbreak had taken place. His swift and comparatively bloodless conquest of the Two Sicilies is one of the most extraordinary incidents in modern history. Meanwhile, the Sardinian generals Cialdini and Farini having advanced into the papal provinces, the papal forces under Lamoricière were routed at Castelfidardo, which was followed by the capture of 4,000 prisoners at Loretto, and the surrender of Lamoricière at Ancona. Thence the Sardinian forces marched into the Abruzzi, while Victor Emmanuel proceeded in person to Naples. On Nov. 7 at Teano, Garibaldi unconditionally relinquished to his sovereign the southern provinces liberated by his genius and valor. Umbria and the march of Ancona were next incorporated with the kingdom of I. The kingdom of I. was formally recognized by all the great European powers with the exception of Austria. On the death of Cavour, 1861, June, the ministry of Baron Ricasoli was formed, but after a brief term of office was succeeded by that of Ratazzi, 1862, Mar. 31, whose avowed subserviency to the French empire created considerable alarm among the liberals of Italy. One of its earliest acts was the incorporation of the s. volunteer forces with the regular army. A great aggregate meeting of deputies from all the liberal clubs of the kingdom was held under Garibaldi's presidency; and having previously been entertained at a grand banquet by the royal princes, he set out on his almost triumphal tour throughout I., with the view of organizing rifle clubs among the youth of all the chief cities. An apprehension on the part of the government that Garibaldi contemplated an armed expedition in aid of Venice led to stringent and unlooked-for measures of repression, which, it is believed, were made to appear prudent by intimations from France. Ministerial orders were next transmitted to Garibaldi, prohibiting any further organization of the rifle societies.

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1862, June 20, Garibaldi arrived in Turin, and on the 28th landed at Palermo, in Sicily, where he met a warm reception from Prince Humbert, heir-apparent of the Italian crown. July 4, the ministry was seriously disturbed by the warmth with which Garibaldi denounced the French occupation of Rome. On the 7th a grand review at Palermo was held in his presence. Volunteers hastened to join him, with the avowed intention of proceeding to Rome, despite the royal proclamation, which accused them of rebellion against their sovereign. A special message, accompanied by the royal proclamation, was forwarded by the king to Garibaldi, who, under the impression that he possessed the covert approbation of the sovereign, declined to desist in his expedition to Rome, but expressed his unshaken sentiments of loyalty to the king. Aug. 22, Sicily was declared in a state of siege, the liberal clubs were dissolved, and an armed force dispatched to pursue and disperse the volunteers. Garibaldi reached Catania on the 18th, and some days later succeeded in effecting a landing on the coast of Calabria with the greater part of his followers. General Cialdini having been appointed commissioner extraordinary in the island of Sicily, with full powers over the civil and military authorities, proceeded to the most stringent measures to effect the capture of Garibaldi. The 'affair of Aspromonte,' in which Garibaldi's small force of volunteers were compelled to surrender, their heroic leader ordering them not to fire on the royal troops, put an end to the semblance of revolution. The wounded chief was conveyed as a prisoner to the fortress of Varignano, at Spezzia. The amnesty granted to him and his followers by the Italian monarch enabled him to proceed to Pisa, whence he returned to his island-home Caprera.

On the meeting of the houses of parliament, the ministry of Ratazzi had to sustain a formidable attack from the liberal members, who demanded the impeachment of the premier and his colleagues. Ratazzi, finding himself unsupported by any section of the house, after an unavailing defense, resigned his portfolio Dec. 10, and was succeeded in office by Signor Farini (q.v.).

At the close of the German-Italian war (see GERMANY). Venetia, 1866, Oct. 3, became part of the kingdom of I. by treaty with Austria. Turin, chief town of Piedmont, was the cap. 1859-65; the court was transferred to Florence in the latter year. In 1867, the French army began to be withdrawn from Rome, and the national aspiration to have the Eternal City as cap. of the kingdom of I. seemed now near its realization. Some of the French troops remained at Rome until the urgent necessities of the Franco-Prussian war compelled Emperor Louis Napoleon to withdraw them. The last detachment left the pontifical territory 1870, Aug. 8; and the Italian troops, under General Cadrona, entered Rome, Sep. 20, after a short resistance by the pontifical troops, who ceased firing at the request of the pope. 1870, Oct. 2, the kingdom of I. assumed the last of its extensive limits, when the whole of the papal states were absorbed by it, and Rome was its recognized capital; and thus were

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realized the aspirations of many generations, the dreams of Mazzini, and the policy of Count Cavour. The last seven years of Victor's reign were uneventful, but were marked by the further consolidation and progress of the kingdom; and after his death (1878, Jan.) his policy was maintained by his son Humbert. 1883, Apr. 12, specie payments were resumed; 1888, I. took possession of Zulla, in the Egyptian Soudan, and notified the powers of the step, against which Egypt, by the Porte's direction, officially protested; a new penal code was adopted, in which the clergy were forbidden to interfere in any way in election matters or to make any demonstration against the general laws and the acquired rights of the kingdom, which intensified the strained relations of the govt. and the papacy, prevented a contemplated demonstration in Rome in favor of the restoration of the temporal power of the pope, and led the clergy to assume an aggressive attitude on the occasion of the 50th anniversary of Pope Leo's admission to the priesthood; and 1889, June 9, a statue of Giordano Bruno (q.v.) was unveiled in Rome in the presence of govt. officials the pope protesting against the act. King Humbert I. was assassinated 1900. I. assumed a protectorate over the kingdom of Abyssinia (q.v.) 1889, Sept. 29.

Italian Language and Literature.—The Italian language most musical of all the tongues of Europe, is descended from the Latin, and there have been various opinions as to the mode of the transition. In the view, however, of the scientific students of language, there is nothing special in the case; the changes are sufficiently accounted for by that tendency to phonetic decay or corruption always at work in a living tongue, and especially active in a chaotic and transition state of society like that of I. at the downfall of the Roman empire. The already corrupt dialects of the uneducated become predominant, and being released from the fixing influence of a written literature, depart more and more from the grammatical standard; and in the case of I., the barbarian intruders would, to a still greater degree, mutilate the Latin, and introduce multitudes of words from the northern tongues. For centuries, this corrupting process went on, in the course of which the Latin gradually divested itself of its original classical peculiarities, and degenerated into the impure or vulgar form known as the *Romana rustica* or *lingua Romanza*, which became the prevailing language of the various races of s. western Europe, and received from each some of the most salient characteristics of their own native dialects.

This 'rustic Latin' may be termed the direct offspring of Latin, and the parent of Italian: in the compositions of the Provençal poets, we find one form of it elevated to the rank of a polished, or *illustre*, written language as early as the 10th c., while the form which prevailed in Italy continued as late as the 12th c., an uncouth and vulgar dialect, contemptuously excluded from all learned composition. In the Sicilian court of the Hohenstaufen emperor, Frederick II., the Italian dialect was first rescued from this state of degradation; adopted by this monarch as the choice

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language of his court, it became the medium of his own and his son's literary and poetic creations, while his learned friend and secretary, Pier delle Vigne, may be termed the earliest Italian poet; his odes and canzones, composed a hundred years before Dante, are in wonderfully pure Italian. The Univ. of Naples, and several of the Sicilian schools, were founded by Frederick, whose cultivated and enlightened court became the centre of the letters and learning of Italy, and the abode of the best intellects of the time. Here, Italian reached a good degree of refinement and correctness, and received the name of the Aulic (court) or of the Sicilian language.

Poets have in all ages been the elevators and guardians of language; and we find Italian in the 12th and 13th c. honorably employed by the poets of the age, especially by those of Tuscany, whose own oral dialect soon took precedence over all the others in polished expression and grammatical accuracy. The chief Italian poets of this age are Guido Guinelli, Guido Ghisilieri, Fabrizio and Onesto of Bologna, Guido Lapo of Mantua; and the Tuscan poets Guittone d'Arezzo, Bonagiunta da Lucca, and Brunetto Latini Fiorentino, illustrious preceptor of Dante. Fra Guittone, member of the order of the Cavalieri Gaudenti, has left several compositions of merit, including sonnets and odes; but his most interesting literary legacy consists of 40 letters in prose, which are regarded as a valuable specimen of early Italian, being the most ancient epistolary composition in the language. The writings of these early poets possess more linguistic than poetic interest, and are found in various collections, chiefly in the *Rime Antiche* (1518), the *Poeti Antichi* by Alacci (1661), and the modern work of Rannucci, *Manuale della Letteratura del Primo Secolo* (Florence 1837, 3 vols.). Brunetto Latini (1260), preceptor of Dante, was reputed 'a man of great sense and science.' His work, *Il Tesoro*, is a marvel of heterogeneous knowledge. *Il Tesoretto* is a curious compendium of moral precepts, and *Il Pataffio* a still more curious production, the obscene levity of which earned for him a place in the *Inferno* of his pupil. Guido Cavalcanti, cherished friend of Dante, was more philosopher than poet. Italian now began to be adopted as the vehicle of learned and scientific prose. The historical chronicles of Matteo Spinola, a Neapolitan, are the oldest specimen of Italian prose literature (1247-68); but the Florentine Malespini (died about 1280) is the first historical writer whose style is elevated and polished. In short, contemporary with the appearance of Dante (q.v.), the Italian dialect was rapidly superseding Latin in grave prose composition, as well as in poetry, and soon became the recognized oral and written polite language of the entire country, while various local dialects were retained among the illiterate classes of the people. It has been finely observed that Dante found the Italian language in its cradle, and exalted it to a throne; his *Divina Commedia* imprinted on the Italian tongue a grave and majestic character, which at once qualified it to rank with the languages of Greece and Rome. The impetus imparted

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by Dante to the language and intellectual life of his country, has continued to the present day.

The minor poets, Francesco Stabile, or Cecco d'Ascoli, burned by the church (1327), and author of *L'Acerba*, a critical attack upon Dante, and a wonderful mixture of learning, acuteness, and superstition; Francesco da Barberino (1264-1348); and Cino da Pistoja, learned jurist and poet, whose work on jurisprudence, *Il Comento sul Codice*, and pleasing amatory verses, won for him the commendations both of Dante and Petrarch (1270-1336), claim mention before the great name Francesco Petrarca (q.v.) (1304-74), creator of Italian lyrical poetry, and enricher and perfecter of its language. The lustre of Petrarch's fame, however, is not from his sonnets alone. Apart from their exquisite beauty and pathos, their classical elegance and simplicity of diction render them an abiding standard of Italian poetry. Italian, which, in its poetical capacities, we have seen created by Dante, polished and refined by Petrarch, was molded into a perfect form of prose first by the prince of novelists, Boccaccio (q.v.). The *Decamerone* is a series of tales, and Boccaccio's best known work. Boccaccio's style is deeply tinged by his culture of classical literature; and in his straining after the pompous majesty of Latin construction, he frequently exceeds the structural capabilities of his own language, which is naturally direct and simple in the order of its composition. Franco Sacchetti (1335-1400) of Florence, and Ser Giovanni Fiorentino (1348), also composed tales distinguished by the excellence of the language; while Dino Compagni and Giovanni Villani enriched the historical literature of I. with excellent chronicles, written in a spirit of fairness, and in great beauty of style.

The 14th c. was lavishly productive of great original literary creations, the writers of that age, or *I Trecentisti*, according to their Tuscan appellation, being as distinguished for the sublime originality of their genius as those of the 15th c. were for abstruse erudition and philosophy. Italian was the chosen language of the *Trecentisti*, and in their writings attained a high refinement and purity. On the other hand, the scholastic writers of the 15th c. almost entirely excluded Italian from their works, substituting for the language of Dante and Petrarch a faulty form of Greek or Latin. To this may probably be attributed the languid development of literature during a period in which magnificent protection was afforded both by the pontifical and sovereign courts of Italy to the literature and art of the century, and when the discovery of printing imparted an impulse to the intellectual vitality of Christendom. Foremost among the encouragers of literature and art were the Medici at Florence; the Visconti, and, later, the Sforzas, at Milan; the houses of Gonzaga and Este at Mantua and Ferrara; the house of Aragon at Naples; and the Pontiff at Rome. Marsilio Ficino, Pico della Mirandola, Leon Battista Alberti, are some of the most distinguished writers who discarded their mother tongue and adopted Latin; while a host of grammarians, historians, philologists, and

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theologians openly pronounced the *illustrious* Italian language a vulgar dialect, unfit for philosophical or learned composition. But this debasement of literary taste was happily of brief duration, and to Lorenzo de' Medici, entitled the 'Father of Letters,' is due the literary revival of the Italian tongue. Under this princely patron of letters, arts, and sciences, public libraries were founded or replenished, learned societies instituted, rich antiquarian treasures collected, universities opened, and a true standard of literary truth and beauty once more set up. His friend and protégé, Angelo Poliziano, wrote elegantly both in Italian and Latin, and composed the first regular dramatic work in the former language, under the title *L'Orfeo*. Toward the close of the 15th c. and the opening of the 16th, a taste for the romantic and heroic in poetry began to show itself. This taste was cultivated by Durante da Gualdo, by Luigi Pulci (q.v.) in his *Morgante Maggiore*, and by the still more famous Matteo Boiardo (q.v.), whose *Orlando Innamorato* evidently suggested the greatest of all the works of this kind, the *Orlando Furioso* of Ariosto. But by far the most important historical works of the time were in Latin—e.g., those of Silvio Piccolomini, Marc Antonio Sabellicus (died 1506), Bernardo Giustinianus (died 1489), and Georgius Stella (died 1480). During the century of scholastic erudition, the spring of Italian eloquence flowed with sluggish course until the impassioned and unstudied oratory of Jerome Savonarola (burned 1498) revived the traditions of ancient Rome, and reminded his bearers that Cicero too was an Italian.

The 15th c., though not marked by much creative genius in literature, unquestionably exercised immense influence on the Italian mind. The revival of letters, the invention of printing, the discovery of a new world, and the opening of a maritime channel to the wealth and traffic of the Indies, co-operated in that wonderful development of art and enterprise which the succeeding age exhibited; while the advancement of learning and science was promoted and systematized by the founding of numerous universities and literary institutions. Many of the magnificent typographical treasures with which the great public libraries of Italy abound, belong to this golden age, and are due to the artistic taste of Aldo Manuzio. See ALDINE EDITION: MANUZIO.

The 16th c. is the Augustan age of Italian letters, art, and science. In a galaxy of splendid names, the brightest are Ariosto (q.v.), Tasso (q.v.), Macchiavelli (q.v.), Guicciardini (q.v.), Raphael (q.v.), Michael Angelo (q.v.), Palladio, and Vignola. Pope Leo X. and his successors vied with the other sovereigns of Italy in munificent patronage of those men of genius, who, under the title of Cinquecentisti, are considered models of pure and noble Italian composition. The *Orlando Furioso* of Ariosto, held to be the first genuine epic of chivalry and romance, celebrates the deeds of the legendary ancestors of the house of Este. It exercised immense influence, even among the most illiterate, by whom its choicest beauties were committed to memory

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to be sung as the solace of labor in the field or city. The next great work of the century was *La Gerusalemme Liberata*, by Torquato Tasso (q.v.), whose father also was an excellent poet and scholar. Tasso's prose writings and epistles are noble in style and grave and philosophical in matter (1544-95). Their best imitators are L'Alamanni, *Il Giron Cortese* and *L'Avarchide*; Rucellai; and Erasmo da Valvasone, in his *La Caccia* and *L'Angeleida* (or *The Wars of the Angels*), from which Milton probably borrowed valuable hints (1593). Giangiorgio Trissino wrote the first notable Italian drama, *Sofonisba*. Besides this, the *Tullia* of Ludovico Martelli, the *Canace* of Sperone Speroni (1500-88), the *Torrismondo* of Tasso, and the *Edipo* of Andrea dell' Anguillara, deserve mention—the last is considered the best Italian tragedy of the time. The comedies of Bentivoglio, Salviati, Cecchi, Firenzuola, and others, are stamped with that prevailing licentiousness which disfigures many of the finest productions of the age. The popular dramatic pieces, or *Commedie dell' Arte*, had as high repute among the lower classes as the higher drama did in courtly and patrician circles. Some of the chief composers of these pantomimic comedies are Flaminio Scala, Angelo Beolco, Andrea Colmo. The writers of pastoral dramas inundate this epoch, but none can compete with Guarini (q.v.) in his sweet idyllic work, *Il Pastor Fido*. Poetry was combined first during this century, with music—one of the earliest operatic compositions being the *Dafne* of Rinuccini (died 1621). The sonnets of Michael Angelo excel in dignity and originality of thought. Vittoria Colonna, celebrated in the verse of Ariosto, was the most illustrious poetess of her time; which produced numerous other female writers, whose works have been collected and published by Domenichi.

Foremost among the prose writers stands Macchiavelli; his *Arte della Guerra* (Art of War), *Istorie Fiorentine* (History of Florence), and political treatise, *Il Principe* (The Prince), all excel in their various styles. Giovanni Botero. Giannotti, and Paruta, also are political writers of high merit. Greater than either is Francesco Guicciardini, whose *History of Italy* has only one blemish, viz., lack of brevity. The works of Bembo (q.v.), historian and poet, exhibit the Italian language subjected to a regular grammatical system. Literature was historically treated by Barbieri and Doni; art, by Vasari, Campi, and Lomazzi; architecture, by Vignola and Palladio.

The progress of the age is perceptible equally in philosophy, which, bursting the fetters of scholastic formalism, displays the utmost freedom of speculation in the works of Cardan (q.v.), Bruno (q.v.), and Vanini. Many celebrated institutions or academies for the discussion and diffusion of knowledge date from the 16th c.—one of the most noted being the academy Della Crusca, founded at Florence for the preservation and perfecting of the Italian language.

The 17th c., less prolific in great literary names than its predecessor, is nevertheless the golden age of Italian science; it produced a host of illustrious discoverers in philosophy,

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mathematics, and physic. Such was the fame of Italian science at this period, that the universities of Florence, Naples, Pisa, and Venice were thronged with foreign students. Learned societies for the cultivation and practical demonstration of the physical sciences were opened throughout Italy (see ACADEMY). Libraries were collected and enriched, to afford every facility to learned research. The most celebrated savants are the world-famous Galileo (see Galilei), Torricelli (q.v.), Borelli, the astronomer Cassini (q.v.), and Viviani, pupil and biographer of Galileo; Malpighi and Bellini, anatomists and physicians. Contemporary with these, we find Gian Vincenzo Gravina, whose lectures on civil law attracted audiences from all Europe. In historical composition, the best known works are Sarpi's famous *History of the Council of Trent*; its equally famous refutation by Pallavicino; *The History of the Wars of the Netherlands*, by Bentivoglio; and of *The Civil Wars of France*, by Davila (q.v.). A few of the great names of literature are—Bianchi, acute thinker on political and social science; Monte-Cucculi, author of the *Aphorisms of the Art of War*, written with Spartan brevity of style; Bartoli, Jesuit historian; and Segneri, Jesuit orator.

The poets of the 17th c., at least Marini (q.v.) and his school, show a degenerate taste. Fondness for trivial conceits, false glitter, and artificiality, are their characteristics, but several of his contemporaries—Chiabrera, Guidi, Tassoni, author of the admirable mock-heroic poem, *La Secchia Rapita* (The Stolen Pail), Filicaja (q.v.), and others, have written with grave energy of style and warmth of sentiment. The theatrical and operatic representations at the various sovereign courts were of exceeding splendor, as if in compensation for the paucity of dramatic compositions.

In the 18th c., a vigorous revival of poetry and letters took place. Giannone, in history; Capasso, in literature; Cirillo, in physic; Mazzochi, in archeology; Il Genovesi, in political economy; the brothers Galiani, in their respective sciences of architecture, political economy, and philology; Filangieri (q.v.) and Beccaria (q.v.) in the philosophy of jurisprudence; Mario Pagano, in the science of civil law; Poli (1746–1825), Volta (1745–1826), Galvani (1737–98), Scarpa (1748–1832), and Spallanzani (1729–99), in physical science; Maffei and Calsabigi, in poetry, are some of the names by which this period was ennobled. The 18th c. can boast also of the greatest names in Italian dramatic literature, Metastasio (q.v.) (1698–1782) considered the master of the pastoral drama; flowing, sweet, and silvery, the language of his gentle muse presents a strange contrast to the brevity, sternness, and classical plainness of Italy's greatest tragedian, Vittorio Alfieri (q.v.) (1749–1803), by whom a thorough revolution was effected in the drama of his country. A no less marked reformer of comedy is his contemporary, Carlo Goldoni (q.v.) (1707–93).

During the 19th c., the genius of Italy has revived in science and literature. By the best writers of the day, a sound Italian style, untainted either by Gallicisms or by the false glitter of the *Seicentisti* school, has been adopted.

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One of the best modern poets of the classical school, Vincenzo Monti, has materially assisted this literary reform: the resolute combatant of the school of Marini, rigidly molding his fine works on the pure *Trecentisti* style; and in his great poem, *Basvilliana*, the language moves with a Dantesque grandeur, which has caused it to be said that the spirit of Dante has inspired the works of Monti. His translation of the *Iliad* and that of the *Odyssey* by Pindemonte, are the best classical translations in Italian. In the wayward and fervid genius of Ugo Foscolo (q.v.), we find the reflection of the vicissitudes and political chaos of his times; his lyrical work, *I Sepolcri*, is written with extreme polish and faultless taste, which may be said also of the lyrics of Leopardi. Botta, Ricci, Bagnoli, Arici Sestini, Pananti, and Lorenzi, are notable among the modern poets. Grossi is a spirited poet, who has written chiefly in the Milanese dialect. In the poignant and imbittered verses of Berchet, we recognize the double inspiration of his country's and his own political sufferings; and the gentler poet, Silvio Pellico, was already famous for his poetic tragedy, *Francesca da Rimini*, previous to his incarceration in an Austrian dungeon.

Rossetti, exile and poet, the most distinguished commentator on Dante's *Divina Commedia*; Giov. Battista Niccolini, whose drama, *Arnoldo da Brescia*, is one of the finest works of modern Italian genius; Leopardi, poet, philologist, and philosopher; Giusti (q.v.), first Italian satirical lyrical of the 19th c.; Mameli, the patriot poet, who fell in 1848 at Rome; Prati, Aleardi, Dall' Ongaro, Carcano, and Montanelli, are some of the conspicuous Italian poets in the 19th c. Among the most successful novelists are Manzoni, whose *Promessi Sposi* has created a new school of fiction; Rosini (*Monaca di Monza*, *Luigia Strozzi*, *Il Conte Ugolino*), Cantù (*Margherita di Pusterla*), Grossi (*Marco Visconti*), and D'Azeglio, whose patriotic novels have exercised wide influence on the youth of the country. *Ettore Fieramosca* and *Nicolo dei Lapi* are models of classical romances. Guerrazzi has written novels full of the noblest poetry. Bersezio and Ruffini are worthy of notice. And among authoresses, are Teresa Bandinella, Cecilia de Luna Folliero, Guistina Michiel, Isabella Albrizzi (whose biography of Canova is a graceful and accurate delineation), and Signora Ferrucci, whose educational works possess high merit. The modern historians of Italy are very numerous. Balbo's *Summary of Italian History*, Botta's *History of Italy*, Coletta's *Naples*, Amari's *Sicilian Vespers*, Cantù's colossal work on *Universal History*, Zeni's *Compendium of Italy's History*, and Scopoli's *History of Italian Legislation*, are among the best works; while interesting historical monographs of various periods or states have been published by Canetti, Canale, Brofferio, Anelli, Cattaneo—the last the graphic recorder of the rising at Milan 1848, and learned compiler of the *Archivio Triennale*, or series of documents bearing on Italian modern history 1848–50. Political economy and philosophy have found in Mazzini, Gioja, and Romagnosi able exponents. The political writings of Joseph Mazzini (q.v.), apart from their

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political tendencies, have exercised immense influence on the youth of Italy by their high moral tone and beauty of language. The various schools of philosophy have found adherents and expounders in Borelli, Galuppi (1770-1846), Mamiani, Rosmini, Gioberti (q.v.), and Tommaseo, mostly exponents of ecclesiastical philosophy; while Testa, Franchi, Mastriani, and Cattaneo are exponents of speculative and independent philosophy. Antiquarian and archæological science has been ably illustrated by Inghirami, Fannucci, Manno, Litta, Visconti, and Sestini. Bossi, Fumigalli, Ferrario, and Rosini have written the best dissertations on art. Biography, somewhat neglected by Italian writers, has found in Prof. Villari a successful cultivator; his *Life of Savonarola* is written with liberality, grace, and eloquence. The most complete histories of Italian literature are Crescimbeni, *Storia della Volgare Poesia*, 6 vols. (Rome 1698; Venice 1731); Quadrio, *Storia e Regione d'ogni Poesia*, 7 vols. (Bologna 1739); Tiraboschi, *Storia della Letteratura Italiana*, 14 vols. (Modena 1772-83; 16 vols. 1787-94; 12 vols. Rome 1785; 16 vols. Milan 1822-26); Corniani, *Secoli della Letteratura Italiana*, 9 vols. (Brescia 1818-19); Maffei, *Storia della Letteratura Italiana* (2d ed. 1834); Giudici (1847); De Sanctis (1871); and *Storia letteraria d'Italia scritta da una società di amici* (Milan 1870-77).

ITALY, FREE CHURCH IN: organized, Milan, 1870, by Alessandro Gavazzi (q.v.) with 23 congregations and 400 communicants. It is the outgrowth of the efforts of Gavazzi to evangelize his countrymen, after his conversion to Protestantism, under the guarantees of the decree of religious liberty of 1848. His early labors were independent of, but in harmony with, the church of the Waldensians, which had 15 congregations in the mountain regions and one in Turin, 1848; and their consummation was retarded many years by the political disturbances in Italy and the active part that Gavazzi took in them. In the organization of the Free Church, the general assembly feature of the Presb. Church and the independent position of each local church in its own affairs as observed in the Congl. churches were adopted. Since its organization, the church has grown steadily and exerted influence for good. By the last census it had 36 congregations, 13 ministers, 16 evangelists, 21 teachers, 1,750 communicants, 284 catechumens, 1,250 pupils in week-day schools, 657 pupils in Sunday-schools, a theol. seminary in Rome with 4 professors and 10 students, and churches in Rome, Milan, Turin, Bologna, Naples, Venice, Florence, and other cities and large towns. The Free Church has received substantial aid from Christians in England, Scotland, and the United States.

ITASCA, ĭ-tās'ka, LAKE: small and picturesque body of water in northern Minn., lat. 47° 10' n., 1,575 ft. above the sea; near the source of the Mississippi river, and long deemed its source: see GLAZIER, LAKE.

ITCH, n. ĭch [AS. *gietha*, an itching, scab: Dut. *jeuken*; Ger. *jücken*, to itch: Bav. *gigkeln*, to shiver, to twitch]: a disease of the skin which inclines the person to scratch the

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part; any strong teasing desire or longing: V. to feel on the skin the peculiar uneasy sensation arising from itch, causing a desire to scratch the skin; to have a teasing or longing desire for. ITCH'ING, imp.: ADJ. having a sensation and desire for scratching; having a constant longing desire: N. a state of the skin which creates the desire for rubbing or scratching; a constant teasing desire. ITCHED, pp. *icht*. ITCHY, a. *ich'i*, infected with the itch; having feeling as if arising from the itch. ITCH'INESS, n. state of being itchy. ITCH'INGLY, ad. *-li*.

ITCH (known also as SCABIES and PSORA): contagious vesicular disease of the skin. All parts of the body, unless perhaps the head, are liable to be affected, but the most common seats of the disease are the wrists and hands, and especially between the fingers. The first sign of this affection is an itching sensation, which, on minute examination, is found to proceed from a minute conical vesicle, while the adjacent portions of epidermis present a more scaly appearance than is natural. This condition of the skin is due to the presence of a minute acarus, the ITCH-MITE (q.v.), which burrows within the epidermis, and excites the cutaneous irritation. The affected parts itch with increased intensity when the patient is warm in bed, or after the use of stimulating drinks or exciting condiments; and as he cannot refrain from scratching himself, the vesicles become more or less broken and interspersed with numerous little bloody points.

The I. being popularly regarded as a somewhat disreputable affection, and being highly contagious, it is important that it be distinguished from other cutaneous disorders. Eczema, prurigo, and lichen, are the affections most likely to be confounded with it; but eczema, though a vesicular disease, presents rounded and not conical vesicles, and at most only a pricking sensation, and nothing like the irritation of I.; while prurigo and lichen are papular disorders, and are not accompanied by vesicles; moreover, none of these diseases are contagious.

The I. is always communicated by contact, either immediately, as by the act of shaking hands, or through the medium of articles of clothing or bedding which have been used by a person suffering from the disorder. In some cases, the proximate cause of the disease, the itch-insect, is conveyed to the sound person in its perfect form; in other cases, the ova or embryos suspended in the fluid of the vesicles may be the agents of transmission.

The disease, if not cured, will continue for an indefinite period, probably for life; but in cold and temperate climates, it never causes serious injury to the health. Numerous external remedies have been employed, but the great remedy is sulphur, which may be regarded as a specific. In the case of an adult, Erasmus Wilson, highest English authority on skin-diseases, recommends that 'four ounces of sulphur ointment should be well rubbed into the entire skin before the fire, and particularly into the affected portions, morning and evening, for two days. It is desirable also that the patient should wear a flannel

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shirt, and retain the same during the whole of the treatment. On the morning of the third day, the patient should take a warm bath, and wash the skin thoroughly with plenty of soap, when the cure will generally be found to be effected.'

When patients strongly object to the smell of sulphur, an ointment made by digesting over a vapor-bath, for 24 hours, three parts of stavesacre in powder, with five parts of lard, and then straining, may be used. According to Bourguignon (who has made numerous experiments on the deleterious action of medicines on the living itch-mite), this ointment will cure the disease in four days.

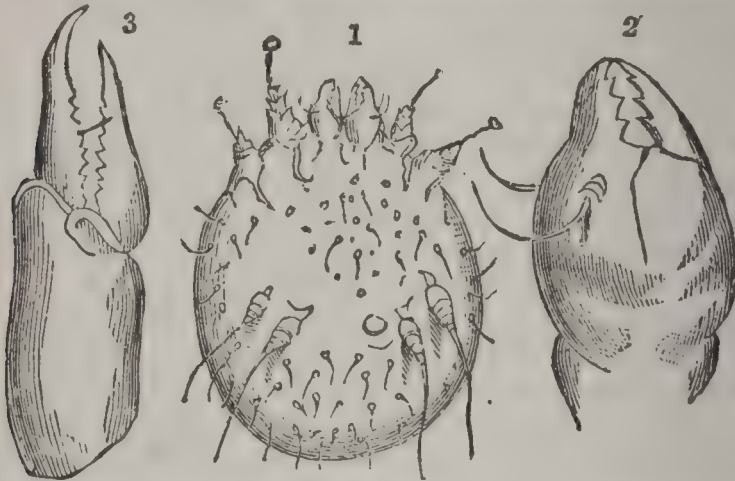
ITCH-MITE (*Acarus scabiei* or *Sarcoptes scabiei*): minute acarus, supposed by some naturalists to be referred to by Aristotle in the 5th book of *Historia Animalium*, cap. 31. But though the itch was undoubtedly known to the Greeks and Romans, there is no certain evidence that a mite was recognized as the cause earlier than by Avenzoar, Arabian physician in the 12th c. Throughout the middle ages, and till the 19th c. the necessary connection between the disease and the mite was universally recognized, as is obvious from the writings of Scaliger (1557) and others; and a paper read by Adams before the Royal Soc., 1805, contains two good figures of the mite. During the first ten years of this century, many practitioners, not succeeding in finding the animal, expressed doubts concerning its existence, and in 1812 there occurred a remarkable incident in the history of this mite. M. Gales, chief apothecary to the Hospital of St. Louis, tempted by a prize offered by one of the unbelievers, published in that year a treatise on the itch, in which he declared that he had seen more than 300 of the mites, and in which he gave a drawing of the animal, which, though it differed materially from the delineations of earlier observers, was at once accepted as an exact representation of the true parasite, and was copied for several years into all works treating the itch, until Raspail discovered that Gales's Memoir was a tissue of deceptions, and that the animal which he had figured was the *cheese-mite*! The existence of the itch-mite was now more distrusted than ever, until 1834, Renucci, Corsican student, demonstrated the presence of the creature. Many points regarding the structure and habits of this curious animal have been since revealed by the investigations of Gras, Raspail, Hebra, Gudden, and especially De la Foad and Bourguignon, who presented to the French Institute *A Practical Treatise on the Entomology and Comparative Pathology of the Itch as it occurs in Man and the Domestic Animals*, published in *Mémoires présentés par divers Savants à l'Académie des Sciences*, vol. for 1862.

The adult female mite is considerably larger than the male; it is visible to the naked eye, and forms a roundish grayish-white corpuscle, not unlike a starch granule; it is about $\frac{1}{5}$ of a line in length, and $\frac{1}{7}$ in breadth. Seen under the microscope, it presents a truncated tortoise-like shape, and is seen to be studded with hairs and bristles. The head terminates in two pairs of mandibles, and as

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these mandibles afford good characteristic distinctions of the species, representations are given in fig. 2 of the mandible in the female itch-mite and in fig. 3 of the mandible in the sugar-mite.

In order to penetrate the horny layer of the epidermis, the mite assumes, according to Gudden, a nearly perpendicular position; and to avoid as much trouble as possible, it usually selects such spots as give least resistance, such as the space between the fingers, the inside of the wrist, etc. Once fairly buried, it does not again come out, but burrows, and forms tortuous galleries within the skin. These galleries resemble the mark which is formed when a pen is drawn lightly over the skin without causing a



Itch-Mite:

1, abdominal view of female itch-mite, magnified 65 diameters; 2, one of its mandibles, magnified 65 diameters; 3, mandible of male sugar-mite, magnified 390 diameters.

scratch. In young children, and in persons with a delicate skin, they appear of grayish-white color; while in persons with a coarse dirty skin they are blackish. At certain intervals, the galleries are pierced by small openings, for the admission of air; it is through these openings, which sometimes appear like very minute black dots, that the young escape. The vesicles characteristic of the itch disease are attributed to a poison ejected by the mite. The males are smaller and much scarcer than the females.

There are numerous species of itch-mite (*Sarcoptes*) which infest the lower animals. One of them (*S. canis*) produces *Mange* (q.v.) in dogs; another (*S. equi*), a comparatively large species, sometimes occurs in horses; another (*S. bovis*) in oxen in parts of Europe; another (*S. ovis*) in sheep. Some of these are occasionally transferred to human beings, and cause irritation and annoyance, which, however, seems limited to the life of the individual mites transferred, the situation not being congenial for their increase.

For further information on the structure and habits of this animal, see Küchenmeister's work on Parasites, vol. II. (translated for the Sydenham Soc.); and Bourguignon's treatise.

ITEM, n. *ī'tēm* [L. *ī'tēm*, also, in like manner: Skr *ī'ttham*, so]: a separate article or particular: AD. also furthermore—used when something is to be added.

ITERATE—ITINERANT.

ITERATE, v. *it'ér-āt* [L. *itērātūs*, gone over again, repeated—from *itērūm*, again, a second time: It. *iterare*, to repeat]: to utter or do a second time; to repeat. **IT'ERATING**, imp. **IT'ERATED**, pp. **IT'ERA'TION**, n. *-ā'shùn*, repetition. **IT'ERATIVE**, a. *-tīv*, repeating.

ITHACA, *ith'a-ka* (vulgarly **THIAKI**, *thē-ā'kē*): one of the Ionian Islands (q.v.), and the smallest except Paro; 17 m. w. of the mainland of Greece, 2 m. n. of Cephalonia. The surface is mountainous, but there are many pleasant valleys. Length, 15 m.; breadth, 4; about 40 sq. m. It was celebrated among the ancients as the principality and home of Ulysses. The cap. is Vathi. Pop. of I. abt. 12,000.

ITHACA, *ith'a-ka*: city, cap. of Tompkins co., N. Y.; on the Cayuga Southern, Utica l. and Elmira, Geneva l. and Sayre, and Del. Lackawanna and Western railroads; 1½ m. from the head of Cayuga Lake, 37 m. s. of Auburn, 40 m. e.s.e. of Geneva, 35 m. n.e. of Elmira, 142 m. w. by s. of Albany. It is handsomely built on both sides of Cayuga Inlet, commands an extended view of beautiful scenery, is the centre of many natural attractions, prominent among which is I. Gorge, which is entered directly from its principal street: and has nearly 150 waterfalls and cascades in its immediate vicinity. I. is lighted with gas and electricity, has costly waterworks, horse and electric street railroads, 15 churches, I. Acad., high and grammar schools, Cornell Univ. (q.v.), Sage College for women, Cornell Public Library (cost. \$65 000), 2 national banks (cap. \$350,000), 1 savings bank, 2 daily and several weekly newspapers, manufactories of flour, paper, carriages, agricultural implements, iron-castings, and machinery; and carries on considerable trade, of which the shipment of Penn. anthracite coal is the most important. I. was organized as a town 1821, soon afterward became the co. seat, and 1888, June 1, became the 29th city in N. Y. Pop. (1880) 9,105; (1890) 11,079; (1900) 13,136.

ITHAND: see under **EIDENT**.

ITHURIEL, n. *ī-thū'rī-ēl*: in *Milton's Paradise Lost*, an angel who assisted in the search through Paradise for Satan, who, when found tempting Eve, was startled and surprised by being touched gently with Ithuriel's spear; hence, detecting or discovering, as the 'Ithuriel spear.'

ITINERANT, a. *ī-tin'ér-ānt* [mid. L. *itīnērans*, or *itīn-ēran'tēm*, making a journey—from L. *itēr*, a way or journey, or *itīnērīs*, of a journey: It. *itinere*, a journey]: passing from place to place; wandering; unsettled: N. one who travels from place to place, or is unsettled; a pedler. **ITIN'ERANTLY**, ad. *-lī*. **ITIN'ERACY**, n. *-ā sī*, or **ITIN'ERANCY**, n. *-ān-sī*, a passing from place to place; in *eccles.* usage (see **METHODISM**, ETC.). **ITIN'ERARY**, n. *-ēr-ā-rī* [F. *itinéraire*]: guide or route-book for travellers (see below): **ADJ.** pertaining to or done on a journey. **ITIN'ERATE**, v. *-ēr-āt* [mid. L. *itīnērātus*, having made a journey]: to travel from place to place, particularly for the purpose of preaching. **ITIN'ERATING**, imp. travelling from

ITINERARY—ITINERATING LIBRARIES.

place to place, particularly for preaching or lecturing. ITIN'ERATED, pp.

ITIN'ERARY, or ITINERARIUM: schedule of a route; road-book, or table of the stages between two places of importance, with the distances from one to another. The itineraries of the ancients contribute much to our acquaintance with ancient geography. Of these, the most important are *Itineraria Antonini* and *Itinerarium Hierosolymitanum*. The *Itineraria Antonini* are two in number, the *Itinerarium provinciarum* and the *Itinerarium marinum*, the former containing the routes through the Roman provinces in Europe, Asia, and Africa; and the latter the principal routes of navigators, who then sailed only along the coasts. They take their name from Antoninus Caracalla, by whom they were published, as corrected up to his time, but they seem to have been originally prepared at an earlier date.—The *Itinerarium Hierosolymitanum* was drawn up A.D. 333, for the use of pilgrims from Burdigala (Bordeaux) to Jerusalem. Of these itineraries, various editions have been published.

ITINERATING LIBRARIES: small collections of books for popular reading contained in boxes, one of which, after being stationed in a village for a time, is transferred to another village, when another library may take its place; and so on with any assigned number of boxes, each with its special assortment. The principle of shifting about boxes of books in this way in rural districts is referred to in the memoirs of Oberlin (q.v.), and has been long known in Wales and in the Scotch Highlands; but it met no significant approval, until it was improved upon and carried into effect on a broad scale by Samuel Brown, merchant in Haddington, Scotland (died 1839), who, taking a deep interest in popular instruction, set in circulation itinerating libraries in several small villages of East Lothian, 1817. The books were assorted to the extent of 50 vols. in a box. At first, there were four boxes; and as the time allowed for each was two years at a village, the inhabitants of four villages had the perusal of 200 vols. in eight years, at one-fourth the expense of the whole. The undertaking was begun and locally superintended from motives of benevolence, and the books were supplied gratuitously. The success attending this economic method of establishing libraries in a country district, led to its extension over a wider sphere, on the principle of readers paying a small sum per annum, also of forming the assortments of books from the new works that had been used in a central subscription library. There were lately several itinerating divisions in use in various parts of Scotland, as also in England, and 12 divisions were some time ago transmitted to Jamaica, where they were to be under the charge of missionaries. This simple expedient has been found a valuable auxiliary to schools, churches, and other agencies of social improvement. See *Itinerating Libraries and their Founder* (1856); and a paper by Mac- lauchlan, read at the Librarians' Conference 1880.

-ITIS—ITURBIDE.

-ITIS, suf. *-î-tîs* [L. *-itis*; Gr. *-itis*]: in *path.*, inflammation, as, hepatitis, inflammation of the liver; pericarditis, inflammation of the pericardium.

ITRI, *ê-trê*: town of s. Italy, province of Caserta, six m. n.w. of Gaeta, picturesquely situated on a lofty isolated hill, surmounted by a ruined castle. I. was the birthplace of the bandit Fra Diavolo. Pop. more than 6,000.

ITSELF, *ît-sêlf'* [*ît*, and *self*]: a reciprocal and emphatic pron.—generally applied to things.

ITU, *ê-tô'*: town of Brazil, province of San Paulo, 40 m. n.n.w. of the town of San Paulo, on the Tiete, in one of the most fertile districts of the province; surrounded by lofty hills. Most of the houses are of earth or mud in a framework of wood. Sugar-cane is extensively cultivated in the surrounding district. Pop. 10,000.

ITURÆA, *î-tô-rê-â*: district of ancient Syria, in the n.e. of Palestine, between Lake Tiberias and Damascus, n. of Bashan and adjoining Auranitis, the modern Hauran. Though often confounded with Hauran, it is now called Jedur, from Jetur, one of Ishmael's sons. In the time of Christ it formed the tetrarchy or govt. of Philip, who received it from his father, Herod the Great. It contains 38 towns and villages, none of which are remarkable. See Luke, iii. 1.

ITURBIDE (or YTURBIDE), *ê-tôr-bê'thâ*, Don AUGUSTIN DE, Emperor of Mexico: 1783, Sept. 27—1824, July 19 (reigned 1822—1823): b. Valladolid, now Morelia, Mex.; son of a Biscayan nobleman and a rich Creole. On occasion of the first insurrections in Mexico, he was appointed by the viceroy, Apodaca, to the command of the militia of his province, and, having brilliant military talents, was successful against the insurgents; but he afterward inclined more to the cause of national Mexican independence, and being trusted by the viceroy with the command of the army 1821, he went over to them, when he found it impossible to obtain from Spain a separate constitution for Mexico. In 1822, May, he was hailed by the soldiers as emperor, and ascended the throne as Augustin I.; and the congress declared the crown hereditary in his family. He ruled rather as a despotic than a constitutional sovereign; his reign was full of trouble, and came to an end in less than a year by his abdication 1823, Mar. 20, which he found himself compelled to offer to a congress which he had forcibly dissolved. He received from congress a yearly pension of abt. \$25,000, in consideration of his military services in 1820, on condition of his retiring from the country, and went with his family to Leghorn. Having resided a few months in that city, he went to England, where he devised a plan for the recovery of the empire which he had surrendered; and issued a statement that he would employ whatever influence he might obtain on his return to Mexico for the introduction of the political institutions of England into that country. The Mexican congress immediately declared him an outlaw, and forbade his setting foot in Mexico on pain of death.

ITURUP—IULIDÆ.

Ignorant of this, he embarked 1824, May 11; landed in disguise at the port of Soto-la-Marina, July 14; was arrested on the 17th, and without being allowed to appeal to the congress was shot at Padilla on the 19th. Congress made a provision for his family.—I.'s soldiers almost idolized him, and he had a pleasing manner in private life. But he showed barbarous cruelty to his prisoners, boasting in a dispatch that he had honored Good-Friday by shooting 300 wretches.—His grandson, AUGUSTIN, son of his eldest son ANGEL, and Alice Green, of Georgetown, D. C. and born in Washington, 1863, was adopted by the unfortunate Emperor Maximilian of Mexico as his heir, Maximilian himself being childless. See *A Statement of some of the Principal Events in the Public Life of Augustin de Iturbide*, written by himself; translated by M. J. Quin (1824).

ITURUP, *ê-tô-rôp'*, known also as ITCOROOP, ITOUROUP, *ê-tô-rôp'*, ATORKOO, *â-tawr-kô'*, GORTPOO, *gawrt-pô'*, and STAT'EN ISLAND: largest island of the Kooril group in the n. Pacific Ocean; separated from the island of Oorooop on the n. by Vries Strait, and from the island of Koonasheer on the s. by St. Anthony Strait. It belongs to Japan, is 140 m. long, average width 20 m., mountainous and fertile, contains an active volcano, and has considerable trade in fish, lumber, and furs.

ITZAS, *êt-sâs'*, or ITZAES, *êt-sîs'*: Indian tribe of Maya stock, supposed to have migrated from Yucatan to the island of Tayasal in Lake Itza, on the boundary between Guatemala and Mexico, 1420. They established themselves strongly on the island, built a large city, adorned it with temples that subsequently took an entire army a whole day to destroy, and had attained a pop. of 25,000 when Cortez visited them, 1525. He was cordially received and entertained by them. The extreme inland position of their country and its destitution of the precious metals enabled the I. to retain their independence till 1698, when they were subdued by the Spanish gov. of Yucatan. Remnants of the tribe are still found on the Lake Itza islands.

ITZEHOE, *ît'sch-hô-é*: town in Denmark, duchy of Holstein, and the oldest in the duchy, on the Stör, in a valley backed by finely wooded hills, about 50 m. n. w. of Hamburg. Tobacco, chicory, sugar, and brandy, are manufactured, and important horse and cattle markets are held here. I. also has considerable general trade by water with Altona and Hamburg. Pop. (1890) 12,481.

The original castle around which I. gradually arose was built by Charlemagne 809. I. was twice taken by Tilly in the Thirty Years' War, and in 1657 a great portion of it was burned by the Swedes.

IULIDÆ, n. *î-û-lî-dê* [L. *iulis*, a kind of millipede; *iulis*, a catkin; Gr. *ioulos*, the first growth of the beard, a catkin, a centipede, or a millipede]: family of Chilognatha (millipedes). The body is elongated and cylindrical, with numerous segments, each bearing two pairs of legs. They advance with a gliding motion and roll themselves up when in danger. They undergo a metamorphosis, the larva com-

IVAN—IVAN V.

mencing with only six feet. The typical genus of the family is *Iulis*, the body of which has 40 to 50 segments, each with a pair of small legs. IULIFORM, a. -*fu*orm, shaped like an iulus.

IVAN, or IWAN, *ē-vân'*, or JOANN [Russian form of John]: frequent Russian name.

IVAN I., Grand Duke of Moscow from 1328 to 1340: surnamed KALITA. He consolidated the power of Moscow, to whose territory he made large additions; he also brought the Metropolitan to reside there, adding thus to its importance. He so established Moscow in power and eminence, that it became the nucleus of the Russian empire. (The Russian rulers named IVAN are differently numbered, according as the Grand Dukes of Moscow are or are not reckoned.)

IVAN III. (THE GREAT), Grand Duke of Moscow, (ruled 1462 to 1505). He may be regarded as the founder of the Russian empire. At first only Grand Duke of Moscow, by skilful diplomacy and intrigue, he succeeded in shaking off entirely the yoke of the Tartars, and in subjecting a number of the Russian principalities to his own sway, among them the proud republic of Novgorod. In 1472, he married a niece of the last Byzantine emperor, in virtue of which he claimed to be the heir of the Byzantine line. By this marriage he brought the two-headed Byzantine eagle into the Russian arms, an emblem with which are connected pretensions not likely to be forgotten by the Russian emperors, although they may not be openly urged. This marriage opened a way also for the entrance of European civilization into Russia, which, on the whole was much benefited by this reign. I. sent embassies to foreign nations, invited Italian architects to his court, and gave refuge to Greek monks from the oppression of the Turks.

IVAN' IV. (THE TERRIBLE), first Czar of Russia: (reigned 1533-84.); died 1584. He did much for the advancement of his country in arts and commerce, as well as for its extension by arms. He concluded a commercial treaty with Queen Elizabeth, after the English had discovered the way to Archangel by sea. In his time a printing-press was set up in Moscow. In the latter years of his reign he committed the atrocities which have given him his name 'Terrible'; among which was the slaughter of 60,000 persons—other accounts make the number only 25,000—at Novgorod in six weeks, on account of a supposed plot to deliver up the city and surrounding territory to the king of Poland. He died of grief for his son whom he had killed in a fit of rage three years before.

IVAN' V., Czar of Russia: (reigned 1740-1) d. 1764, Dec. 5; son of Duke Anthony Ulric of Brunswick-Wolfenbüttel, and the Russian Grand Duchess Anna Carlowna. Empress Anna Ivanowna adopted him as her son and heir, but she dying soon after, and Elizabeth, daughter of Peter the Great, seizing the throne, he was imprisoned during the remainder of his life; and by the orders either of Em-

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press Catharine II. or of her counsellors, was put to death by the officers of the garrison at Schlüsselburg where he was confined. It was said that his long imprisonment had made him imbecile.

IVANOVO, *ē-vá-nō'vō*, or IVANOVO-VOZNESENSK: town of Russia, gov. of Vladimir, 150 m. w.n.w. of Moscow, on the river Ouyod. The name of I. is found in the annals of the 16th c. In 1741 it came in possession of the Counts Sheremetieff, to whom, at the present day, belongs the territory of I. I. is called the 'Manchester of Russia,' being the centre of the Russian cotton manufacture, which gives employment to a great part of the inhabitants not only of the town, but also of the surrounding district. There are also large cotton-printing establishments in the town.

-IVE, suff. *-iv*: common adjective suffix in English, derived from the Latin *-ivus*; it gives an active force to the stem to which it is suffixed; as motive, that which moves; formative, that which forms.

IVES, *ivz*, ELI, M.D.: 1779, Feb. 7—1861, Oct. 8; b. New Haven: one of the founders of the medical dept. of Yale University. He graduated at Yale College 1799, was rector of the Hopkins grammar-school in New Haven, 1799—1801; studied medicine with his father, Levi I., M.D.; was associated with Prof. Benjamin Silliman in establishing the medical dept. of Yale, 1813; was prof. of materia medica there, 1813—29, and of the theory and practice of medicine, 1829—52; founded the Horticultural and Pomological Soc's.; was pres. of the Conn. and National Medical Assocs., and was active in educational and reformatory movements.

IVES, FREDERIC EUGENE: an American inventor; b. in Litchfield, Conn., 1856, Feb. 17; was in charge of the photographic laboratory of Cornell Univ., 1874-78; invented the first practically successful process of half-tone photo-engraving, 1878; the half-tone photo-engraving process now universally employed, 1886; color photography on the trichromatic principle, which afterward culminated in the three-color printing process on the typographic press; and the kromskop. He has lectured extensively before scientific societies in the United States and England; also written many books.

IVES, LEVI SILLIMAN, D.D., LL.D.: 1797, Sep. 16—1867, Oct. 13; b. Meriden, Conn.; bishop of the Prot. Episc. Church. He was brought up on his father's farm, served a year in the army in the war of 1812—15, was educated at Lowville Acad., entered Hamilton College to prepare for the ministry of the Presb. Church 1816, withdrew on account of feeble health, joined the Prot. Episc. Church, 1819, was ordained deacon 1822 and priest 1823, and elected bp. of N. C. 1831. In 1848—9 he exhibited such strong sympathy with the tractarian movement in England, that he was brought into antagonism with the majority in his diocese, and after publicly renouncing and then reasserting the objectionable doctrines he went to Rome and joined the Rom. Cath. Church in 1852. He was deposed from his

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bishopric in the Prot. Episc. Church, and after his return to New York became prof. in St. John's College (Rom. Cath.), at Fordham, lecturer in the convents of the Sacred Heart and the Sisters of Charity, and founder and first pres. of the Catholic Protectory for Destitute Children. He published a *Catechism* for the slaves in N. C., *Manual of Devotion, Humility a Ministerial Qualification* (1840), *Sermons on the Obedience of Faith* (1849), and *The Trials of a Mind in its Progress to Catholicism, a Letter to his Old Friends* (1853).

IVES, *ivz*: St. municipal and parliamentary borough of England, county of Cornwall, beautifully situated on the n.e. shore of the bay of St. I., with an outlook on the Bristol Channel, about 10 m. n.n.e. of Penzance. It is a very old and picturesque town; its church, a granite building of the early part of the 15th c., stands on the beach, and is reached by the spray in rough weather. Its harbor admits vessels of 200 tons. I. is the headquarters of the pilchard fishery. In the vicinity are several important tin and copper mines. Pop. of parl. borough (1871) 10,034; (1881) 8,705.

IVES, St.: small market-town of England in Huntingdonshire, on the left bank of the Ouse, 6 m. e. of Huntingdon. A very large weekly cattle and corn market is held here. Brewing and malting are chief branches of industry. Pop. (1871) 3,248; (1881) 3,036.

IVIED: see under IVY.

IVIZA, *ē-vē'sā* (anc. *Elbusus*): one of the Balearic Isles (q.v.), about 50 m. s.w. of Majorca. It is 23 m. long, and 12 m. broad.—Iviza, the chief town, has a pop. of 7,500. Salt, the principal article of export, is extensively manufactured on the shore. Pop. of the island of I. 24,000.

IVORY, n. *ī'vō-rī* [F. *ivoire*; OF. *ivurie*; It. *avorio*, ivory—from L. *ēbōrēŭs*, pertaining to ivory—from *ēbŭr*, ivory: Skr. *ibha*, an elephant]: bony tusk of the male elephant; also teeth or tusks of the sea-horse; any white organic structure resembling ivory: ADJ. made or prepared from ivory; resembling ivory. IVORY-BLACK, carbonized or charred bone or ivory (see BONE-BLACK). IVORY-NUT, the nut of a species of palm tree—so called from the fluid found in the nuts hardening into a whitish close-grained aluminous substance, often called *vegetable ivory*, from its resembling ivory in texture and color (see IVORY, VEGETABLE). IVORIES, n. plu. *-rīz*, a general term for works of art executed in ivory.

IVORY: name formerly given to the main substance of the teeth of all animals, but now restricted to that modification of *dentine* or tooth-substance which in transverse sections shows lines of different colors running in circular arcs, and forming by their decussation minute lozenge-shaped spaces. By this character, which is presented by every portion of any transverse section of an elephant's tusk, true I. may be distinguished from every other kind of tooth substance, and from every counterfeit, whether

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derived from tooth or bone. Although no other teeth, except those of the elephant, present this characteristic, many other animals, such as the walrus, narwhal, hippopotamus, etc., possess teeth, horns, or tusks, which, from their large size and from their density, can be used for the same purposes in the arts as those for which true I. is employed. Also, see IVORY, VEGETABLE: CELLULOID. The I. of the tusks of the African elephant is held in the highest estimation by the manufacturer, on account of its greater density and whiteness. The tusks are of all sizes, from a few ounces in weight to more than 170 lbs. each. Holtzapffel states that he has seen fossil tusks from the banks of the rivers of n. Siberia which weighed 186 lbs. each. The average weight of tusks in the African I. districts is stated at 20 to 50 lbs. There are various chemical processes by which I. may be dyed of various colors, as black, blue, green, yellow, red, and violet. Ivory articles can be made flexible and semi-transparent by immersion in a solution of phosphoric acid of sp. gr. 1.130, till they become translucent. They are then taken out, washed with water, and dried with a soft cloth, when they are as flexible as leather. They harden on exposure to dry air, but resume their pliancy when immersed in hot water. For much important information on I. generally, see Holtzapffel's *Mechanical Manipulation*.

The tusks of the elephant have from very early times been an important article of trade, in consequence of their beauty as a material for ornamental manufactures, and even for works in fine art. I. is frequently mentioned in the Old Testament. With the Greeks it became a most important material, and by the hands of the sculptor Phidias were made noble statues of I. with gold. By the Romans, who were supplied from Africa, it was also extensively used, and by them its use was diffused over Europe. The art of working in I. doubtless had its origin in India, where the material has always been much valued, and whence was formerly supplied much of the I. sent to Europe. The value of I. is in proportion to the size and soundness of the teeth. Below the weight of five pounds, they are called *scrivelloes*, and formerly seldom brought as much as \$1.25 per lb.; while double that sum was a very high price for unusually large teeth. But in consequence of its increasing scarcity by reason of the gradual but reckless extermination of the elephant, there has been a great rise in the price of I. in recent years. In 1882, it was selling in England as high as \$5,000 to \$6,500 per ton.

The so-called I. obtained from the hippopotamus is in especial favor with dentists for making false teeth on account of its pure white color and freedom from grain. The fossil I. found in considerable quantity in Siberia and the arctic regions, is uncommonly hard and brittle; it is also whiter, and lacks its waxy softness. At present, the demand for I. is rapidly increasing, owing to the great taste and skill of some of the artists who work in this material, and as the supply increases very slowly, the price is likely to become very great. The beautiful art of ivory-

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carving has recently made extraordinary progress, as has been shown by works in I. sent to the various international exhibitions; some single specimens have had a value of \$2,500.

IVORY, ARTIFICIAL: see CELLULOID.

IVORY, VEGETABLE: close-grained, whitish, albuminous substance, furnished by one of the most beautiful of all the palm tribe. It grows on the Andean plains of Peru, and on the banks of the river Magdalena and other parts of S. America. The stem of this palm (the *Phytelephas macrocarpa*) is short and procumbent, but it has, proceeding from its crown, a magnificent tuft of light-green pinnated leaves of extraordinary size and beauty; they are like immense ostrich-feathers rising from 30 to 40 ft. in height. The flowers are on a crowded spadix, and have neither calyx nor corolla. The fruit, as large as a man's head, consists of many 4-celled leathery drupes aggregated together, and contains numerous nuts of somewhat triangular form, each nut being nearly as large as a hen's egg; they are called *Corozo nuts* in commerce. The kernels of these nuts when ripe are exceedingly hard and white, in fact they resemble ivory so completely that few names have ever been better applied than that of vegetable ivory. They have of late come into extensive use by turners in the manufacture of buttons, umbrella-handles, and small trinkets, and so closely resemble true I. as frequently to deceive competent judges. Millions of these nuts are now exported annually; they are largely used by the London and Birmingham turners.

IVORY COAST: part of the Atlantic coast of Upper Guinea, west Africa, between the Grain Coast or Cape Palmas on the w., and the Gold Coast or the Assinie river on the e. The I. C. is low, sandy, and unhealthful, but the interior is rich in fertile table-lands. The chief places, former trading stations for the interior settlements, are Fort Nernour, Grand Bassam, Piccaninny Bassam, Drewin, Walloo, Assinie, and Kutenu. Formerly there was a large traffic in gold-dust, ivory, and palm oil, but for a number of years this trade was so unimportant that the French abandoned most of the stations. In 1884 they re-occupied Grand Bassam, Assinie, and Kutenu, but for political purposes chiefly.

IVREA, *ê-vrā'â*: town of Piedmont, province of Turin, on the left bank of the Dora Baltea, partly on level ground, and partly on an eminence exposed to the sirocco winds. The cathedral is supposed to have been a temple of Apollo, and contains an ancient sepulchral monument of the age of Augustus. The carnival of I. is famed for its picturesque allegorical pageants. Pop. abt. 7,000.

IVRY-SUR-SEINE, *ê-vrê' sùr-sân'*: manufacturing town of France, dept. of Seine, on the left bank of the river Seine. 3 m. above Paris. Glass, earthenware, and chemical products are chief manufactures. Pop. (1891) 22,357.

IVY, n. *î'vî* [AS. *ifig*; O.H.G. *ebah*; Ger. *epheu*, ivy; Gael. *eidhean*, ivy—from *eid*, to clothe]: a well-known

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evergreen climbing plant of many species; the *Hedera helix*, ord. *Araliaceæ*. **IVIED**, a. *i'vid*, overgrown with ivy. **IVY-MANTLED**, overgrown or covered with ivy.

IVY (*Hedera*): genus of plants of nat. ord. *Araliaceæ*, consisting of shrubs and trees, natives mostly of tropical countries. The flowers have five or ten petals, and five or ten converging or consolidated styles. The fruit is a berry with five or ten cells. —The **COMMON IVY** (*H. helix*) is a well-known native of most parts of Europe, though it is more rare in the northern countries. It, with other species, grows also in America. Its long, creeping, branched stem—climbing on trees and walls to a great height, and closely adhering even to very hard substances by means of rootlets which it throws out in great abundance along its whole length—acquires in very aged plants almost the thickness of a small tree. Its 5-lobed, shining, stalked, evergreen leaves, clothing bare walls with green luxuriance, serve to throw off rain, while the rootlets of the stem suck out the moisture, so as to render damp walls dry, contrary to a common prejudice, that



Ivy, showing the Rootlets.

ivy tends to produce dampness in walls. It injures trees, however, both by abstracting their sap and by constriction. The flowering branches of ivy have ovate, entire leaves, very different from the others. Its small greenish flowers are produced in the beginning of winter, and the small black berries are ripened in the following year. The berries are eagerly eaten by many birds, though they have a pungent taste, and contain a peculiar bitter principle called *hederine*, and an acid called *hederic acid*; which are also found in a gummy exudation obtained by incisions from the stem, and occasionally used in medicine as a depilatory and a stimulant, and in varnish-making. An ointment made from the leaves is used in the Highlands of Scotland

IWAKURA TOMOMI—IXION.

to cure burns. In Egypt the ivy was sacred to Osiris, in Greece to Bacchus (Dionysos), whose thyrsus was represented as surrounded with ivy; the Romans mingled it in the laurel crowns of their poets.

There are several varieties of ivy often planted for ornamental purposes, of which that generally known in Britain as *Irish Ivy*, and on the European continent and in America as *English Ivy*, is particularly esteemed for its large leaves and luxuriant growth. It is said to be a native of the Canary Isles. Ivy grows readily from cuttings.—*H. umbellifera*, native of Amboyna, is said to produce a finely aromatic wood; and *H. terebinthacea*, a Ceylonese species, yields a resinous substance which smells like turpentine.

On the American continent, the ivy, like the holly, is rare, not that the winters are too cold, but that the summers are too hot and dry. The requirements of the plant are not duly attended to. Usually, where native ferns grow, the ivy will thrive. The varieties of *Hedera Helix* should be preferred. In dry districts, ivy should be planted on the n. side of buildings, and for the first four years carefully watered and trained: afterward it can care for itself. The ivy thrives well in the shade.

IWAKURA TOMOMI, *ē-wá-kó'râ to-mō'mē*; 1825-1883, July 20; b. Japan: statesman. He was a member of the class of nobles, was educated at Kioto, attached himself at an early age to the personal fortunes of the Mikado then in confinement, was received at the imperial court 1858, was active in overthrowing the Tycoon and establishing the govt. of the Mikado, was soon afterward appointed a member of the privy council, became vice-pres. of the imperial cabinet 1868, received the title *Sionii* and a special mark of the emperor's friendship 1869, was appointed minister of foreign affairs and vice prime minister 1871, visited the United states and the great treaty powers with a special embassy, opposed aggressive movements in Corea and Formosa, for which he was nearly murdered 1874; and was vice prime minister and third pres. of the council from 1871 till ill health compelled him to resign shortly before his death. He was a man of superior culture, an advocate of national progress, and the leader of the peace party in Japan. Three of his sons were educated in the United States.

IWIS, or Ywis, ad. *ī-wīs'* [AS. *gewis*, certain: Dut. *gewis*, certain, certainly: Ger. *gewiss*, certainly]: in OE., certainly.

IXION, *īks-ī'on*: in mythology, King of Gyrtion or Thesaly, variously reputed the son of Phlegyas, of Leontes, and of Antion by Perimela, daughter of Amythaon. He married Dia, daughter of Deioneus, treacherously murdered his father-in-law while the latter was his guest, was shunned for his crime by all mankind, was taken to heaven by Jupiter, where he attempted to seduce Juno, was banished from the company of the gods, and punished by being bound to a wheel which rolls unceasingly through the air. He was the father of the centaurs.

IXOLYTE—IZDUBAR.

IXOLYTE, n. *iks-ō-līt* [Gr. *ixos*, bird-lime; *lithos*, a stone]: one of the mineral resins of a hyacinth-red color, which becomes soft at 169° Fahr.

IXORA, n. plu. *iks-ō'ră* [from *Iswara*, a Malabar deity to whom scarlet flowers were offered]: a genus of Indian and tropical African shrubs, ord. *Cinchonacææ*, producing corymbs of handsome scarlet, pink, or white flowers, frequently of an agreeable fragrance.

IZALCO, *ē-sāl'kō*: active volcano 36 m. n.w. of the city of San Salvador in the Central American republic of that name, near lat. 13° 15' n., long. 89° 44' w. It suddenly burst out in a level plain used as a cattle range 1770, Feb. 20, has since grown to a height of more than 6,000 ft., has an eruption every 16 minutes, its sides are wholly destitute of vegetation, and the light of its burning crater is visible far at sea. Excepting Jorullo in Mexico it is the only known volcano that has arisen from the level of the plain. It is locally called 'the lighthouse of San Salvador.'—The city of Izalco has a pop. of 4,000 to 5,000, chiefly Indians, and previous to the earthquake of 1859 had considerable commercial importance.

IZARD, *iz'erd*, GEORGE: 1777–1828, Nov. 22; b. S. C.: soldier. He received a collegiate education, was appointed lieut. of artil. 1794, served as lieut. in the French engineers 1796–7, became engineer in charge of the fortifications in Charleston harbor 1798, was promoted capt. and appointed aide to Gen. Hamilton 1799; resigned 1803, appointed col. of artil. 1812, Mar., promoted brig. gen. 1813 and maj. gen. 1814, and was gov. of Ark. Terr. 1825 till his death.

IZ'ARD, RALPH: 1742–1804, May 30; b. near Charleston, S. C.: statesman. He inherited a large estate in lands and slaves, graduated at Cambridge Univ., England, spent several years in New York and London, espoused the patriot cause at the beginning of the revolutionary war, was appointed by congress commissioner to Tuscany 1776, Dec., established his residence at Paris, supported the policy of Arthur Lee against that of Franklin, Deane and other colonial agents in France; returned to the United States 1780, July; pledged his estates as security for the purchase of ships of war in Europe, was a delegate in congress 1782–3, U. S. senator from S. C. 1789–95, and pres. pro tem. of the senate in the 1st session of the 3d congress.

IZDUBAR, *iz-dō-bār'*: name of a person appearing frequently in the 12 tablets of Chaldæan inscriptions discovered (1872) and translated by the Rev. George Smith, and now in the British Museum (photographic copies in the Smithsonian Institution, Washington). The tablets give an account of the adventures and misfortunes of I., and the 11th presents the Chaldæan account of the Deluge. The identity of I. is questioned by able mythologists. The discoverer of the tablets believes him to have been a king of Babylonia, identical with the Biblical Nimrod, while Sir Henry Rawlinson, Prof. Max Müller, and G. W. Cox maintain that the tablets present a series of myths or legends, the prototype of the 12 labors of Hercules, and that I. was merely a convenient hero of them.

J

J, or *j*, *jā*: tenth letter in the English alphabet; now uniformly used as a consonant, but formerly treated as a vowel, and identical with the vowel *i*: **J** is still found as *i* in old notations, as *vij.* for *vii.* = 7. **J** has in Eng. the power of *dzh*; in Fr., of *zh*; and in Ger., of *y*. Both the sound and the character have sprung out of the original vowel *i*. When such a word as *Julius* is pronounced rapidly, it naturally slides into *Yulius*. The Romans, though they had but one character for both, recognized this distinction between the vowel and the semi-vowel; and in the case of such words as *cuius*, *maius*, some writers doubled the *i*, and wrote one or both long, as *cuiius* or *cuius*. There is little doubt that the original Roman sound of this semi-vowel was that of Eng. *y* (youth), still given to it in German. But as this sound has a tendency to convert the consonant preceding it in a sibilant (see letter C), so it has a tendency to become itself sibilant, and *Yul-* slides into Fr. *zhul-*, Eng. *dzhul-*. This transition had already taken place in the later ages of the Latin, at least in the popular pronunciation, as appears from such inscriptions as *congiunta*, for *conjuncta*; *Zesu*, for *Jesu*.

The Dutch scholars of the 16th and 17th c. first introduced a regular distinction between the consonantal and vowel powers of *i*, and marked the former by the distinct character *j* (a long *i*, projecting below the line). The character has been adopted in the modern Teutonic and Romanic languages. The Italian represents the sibilant sound of *j* by *gi* or *ggi*, as *Giovanni*, from Lat. *Johannes*; *maggiore*, from Lat. *maior*. In Span., it has a guttural power, and is interchangeable with *x*, as *Xeres*, or *Jeres*.

JAAL-GOAT, n. *jā'al-gōt*: *Capra jaela*, the Abyssinian ibex; found in the mountains of Abyssinia, in Upper Egypt, at Mount Sinai, and probably in Persia.

JABBER, v. *jāb'ber* [imitative of a noisy indistinct utterance: Scot. *gabby*: F. *japper*, to yelp; *jaboter*, to mutter: Icel. *gabba*, to mock, to scoff]: to talk rapidly and indistinctly; to talk nonsensically; to chatter: N. utterance of words rapidly and indistinctly. **JAB'BERING**, imp. **JAB'BERED**, pp. *-berd*. **JAB'BERER**, n. *-ber-ér*, one who.

JABBOK, *jāb'ōk*: river of Syria, rising in the Haboran, flowing w., passing n. of Mount Gilead, and, after a course of about 45 m., emptying into the Jordan about 30 m. n. of the Dead Sea. It formed the n. boundary of Ammon, and separated the kingdom of Sihon, King of Heshbon, from that of Og, King of Bashan. On the s. bank of J.. Jacob and Esau held their interview. It is now known as

JABIRU—JACAMAR.

Zeska or Zurka. See Num. xxi. 24; Deut. ii. 37; iii. 16 Josh. xii. 2; Judg. xi. 13, 22; Gen. xxxii. 22.

JABIRU, n. *jăb'î-rô'* [Brazilian], (*Mycteria*): genus of wading birds of the same family with storks and adjutants;



Australian Jabiru.

the chief distinction from the storks being that the bill is a little curved upward. The species are few, but are widely distributed in S. America, Africa, and Australia.

JABORANDI, *jăb-o-răn'dî*: drug made from the leaves and twigs of the *Pilocarpus pinnatus*, whose valuable properties were established by Dr. Coutinho, of Pernambuco, 1875, and which is esteemed as one of the most important of the recent additions to materia medica. It is found in various parts of S. America, but chiefly in Brazil; attains an average height of 10 ft., has leaves 1 ft. or 1½ ft. long composed of clusters of from 4 to 10 smaller ones (4 in. long), with dark-green upper surface and paler shining under surface, and its leaves and stems when crushed have an aromatic smell and bitter taste. A volatile oil and an alkaloid (*pilocarpin*), which is converted into salts when combined with certain acids, are the constituents of the drug. J. is now known as one of the most powerful diaphoretics, or promoters of insensible perspiration, and is used in numerous other methods of medical treatment; but should never be taken unadvisedly. Its efficacy has been proved in certain cases of pleurisy, asthma, kidney disease, ordinary dropsies, mumps, intermittent fevers, and in some forms of ophthalmic operations.

JABUTICA'BA: see EUGENIA.

JACAMAR, n. *jăk'ă-mâr'* [*F. jacamar*]: one of a genus of birds inhabiting tropical America, of brilliant plumage, allied to the kingfishers, and having the habits of the bee-eaters.

JACANA—JACHMANN.

JACANA, n. *jă-ká'nă* [Brazilian], (*Parra*): genus of birds allied to the rails, of the order *Grallæ*, commonly ranked in the family *Rallidæ*, natives of warm spots of Asia and the Asiatic islands, Africa, and S. America. In general appearance, they much resemble gallinules and coots. The wings are armed in front with sharp spurs. The feet, though not webbed, are adapted, by the great length of toes and claws, for walking on the surface of weed-covered lakes and swamps, the native haunts of these birds. The **COMMON J.** (*P. Jacana*) is a S. American species, abundant



Common Jacana (*Parra Jacana*).

in Guiana and Brazil; about 10 in. long; black, except the back and part of the wings, which are of bright chestnut color. The **INDIAN J.** (*P. Indica*) and the **CHINESE J.** (*P. Sinensis*) are among the best known species.

JACARANDA, n. *jăk'ă-răn'dă* [Brazilian]: fine lofty tree, from which is obtained a very hard, heavy, brown wood, called also *Rosewood*, from its faint agreeable smell of roses. Rosewood, or J. wood, is exported from S. America, and is produced by several trees of the genus *Jacaranda*, of nat. ord. *Bignoniaceæ*. Several species of this genus are called *Caroba* in Brazil, and are there accounted anti-syphilitic.—Several species of the nearly allied genus *Tecoma* have an extremely hard wood, as *T. pentaphylla*, native of the Caribbean Islands. The Brazilian Indians make their bows of the wood of *T. toxiphora* or *Pao d'arco*.

JACARE, *jăk'a-ră*, or **YACARE**, *yăk'a-ră*: name of various species of Alligators found in S. America: see **ALLIGATOR**.

JACHMANN, *yăch'mân*, **EDUARD KARL EMANUEL**: b. Dantzic, Prussia, 1822, Mar. 2: naval officer. He entered the Prussian navy as cabin boy 1839, was commissioned **lieut.** 1845, promoted commander of a gunboat squadron

JACINTH—JACK.

1849, capt. 1855, commanded a naval expedition to open commercial relations with China and e. Asia 1859–62, promoted commander of the Baltic fleet, created rear-admiral for his services in the war with Denmark 1864, chief of the naval station at Kiel 1864–7, appointed pres. of the naval dept. 1867, promoted vice-admiral 1868, commander-in-chief of the whole German navy 1871, Dec. 31, and retired 1872.

JACINTH, n. *jā sīnth* [F *jacinthe*—from L. *hyācin'thūs*]: another name for the *hyacinth*, a species of precious stone, of various colors; called also *jargon* or *zircon*.

JACITARA PALM, *jās-ī-tā'ra pām* (*Desmoncus macrocaranthus*): species of palm in the forests of the low lands of the Amazon district, S America. It has a slender flexible stem (see **DESMONCUS**), often 60 or 70 ft. long. The outer part of the stem, cut into long strips, is used for making those very strong and elastic plaited cylinders in which the grated root of the mandioc (cassava or tapioca) is squeezed, to free it from its poisonous juice.

JACK: a coat of mail: see under **JACKET**.

JACK, n. *jāk* [usually treated as a familiar corruption or diminutive of *John*; but really from F. *Jacques* for L. *Jacōbūs* (English *James*): F. *jaque*, a garment much worn by the *Jacques*, or the revolted peasants of France in the 14th cent.: comp. Gael. *dítheach* = *jäch*, a beggar, a low fellow]: name applied as an expression of familiarity; *colloq.*, a low fellow; an upstart: applied to various mechanical contrivances for replacing the personal service of an attendant; a screw for raising heavy weights; a contrivance to turn a spit; any timber cut short of its usual length; a leathern cup or jug: a flag or ensign; a sailor—usually in composition, as *jack-tar*.—‘The Jewish *Jacobus* was corrupted through *Jacquemes* to *Jaques* in France, and *James* in England; and *Jaques* being the commonest Christian name in the former country, was used as a contemptuous expression for a common man; *Jacquerie*, an insurrection of the peasants. The introduction of the word in the same sense into England seems to have led to the use of *Jack* as the familiar synonyme of *John*, which happened to be there the commonest name, as *Jaques* in France. The term was then applied to any mechanical contrivance for replacing the personal service of an attendant, or to an implement subjected to rough and familiar usage.’—Wedgewood’s *Dic. of Eng. Etymology*. This explains the very varied use of this word, whether single or in composition; as *boot-jack*, *jack-boots*, *black-jack* (leathern jug for household service). *Jacket* (diminutive of *Jack*) is a short coat for homely use. **JACK**, a. sorry; coarse; indifferent; a prefix signifying male, as **JACKASS**. **JACKS**, n. plu. wooden wedges used in coal-mining. **BOOT-JACK**, an implement for taking off and putting on boots. **JACK'-STRAW**, n., slip of straw, wood, ivory, bone, or other material used in a game, in which all the strips are thrown into confusion on a table to be picked singly with a hooked instrument without disturbing the rest. **JACK-TOWEL**, a

JACK—JACKAL.

coarse towel hanging from a roller for general use. **JACK-BOOTS**, tall boots of tough thick leather, reaching above the knee; formerly worn by cavalry; now worn by civilians in various kinds of rough work. In some instances, as an additional protection against sword-cuts, they were lined with thin plates of iron. The only regiments in the British service which still retain these handsome but cumbrous boots are the Life Guards and Royal Horse Guards: see **BOOTS**. **BLACK-JACK** [Dut. *jakke*]: a leathern jug for household service. **JACK-PLANE**, a large plane for heavy work. **JACK-SCREW**, screw used for stowing cotton in the hold of a ship; also, machine for raising heavy weights, such as houses and ships. The forms are various; the most convenient is a single screw, whose inclined plane is as near as practical to the horizontal. The most powerful form is a differential screw. **JACK-STAFF**, the staff upon which the union-jack is hoisted. **UNION-JACK**, the national flag of Great Britain and Ireland, exhibiting the union of the three crosses—see under **UNION**. **JACK-IN-A-BOX**, a figure made to start out of a box on opening the lid; a piece of machinery for raising heavy weights a little way off the ground. **JACK-IN-OFFICE**, a person who presumes on the authority with which he is invested. **JACK-OF-ALL-TRADES**, one able to turn his hand to many things, generally used in a half-contemptuous sense. **JACK-PUDDING**, a merry-andrew. **JACK-A-LANTERN**, or **JACK-WITH-A-LANTERN**, or **JACK-O'-LANTERN**, will-o'-the-wisp; the ignis fatuus (q.v.). **JACK-O'-THE-CLOCK**, in *OE.*, a figure on an old clock, generally of a man with a club or hammer, which struck the hours on the bell.

JACK, *jāk*, or **JAK**, *jāk*, or **JACA**, *já'ka* (*Artocarpus integrifolia*): tree of the same genus with the Bread-fruit (q.v.), native of the E. Indies. It is a larger tree than the Bread-fruit, and has undivided leaves. The fruit is very large, weighing from 5 lbs. to 50, sometimes 70 lbs. The fruit, produced in very great abundance, resembles the bread-fruit, but it is of inferior quality, the pulp having a strong unpleasant flavor; yet it forms great part of the food of the natives in parts of India, Ceylon, etc. The seeds, which lie immediately under the rind, are very palatable when roasted. The timber, which is yellowish, is used for almost every purpose, being both strong and ornamental, and is exported to Europe for making musical instruments, cabinet-work, the backs of brushes, marqueterie floors, etc. The *J.* is now much planted in many tropical countries of which it is not a native.

JACKAL, n. *jāk'awl* [Ar. *jakal*; Pers. *shaghál*; Sp. *chacal*]: wild carnivorous animal inhabiting Asia and Africa, resembling partly a dog and partly a fox; *figuratively*, one who does the disreputable work of another.

JACK'AL: common name of a number of species and varieties of the dog genus, abounding in many parts of Asia and Africa, but not found in any of the other quarters of the globe, except that one of the kinds extends into Greece. They agree in all their most important charac-

JACKALENT.

ters with wolves and dogs, and many naturalists suppose that some of the domestic varieties of dog are of jackal parentage. The pupil of the eye is circular, as in the dog and wolf, though the form and tail are somewhat fox-like. The head is narrow, and the muzzle pointed. The ears are erect, and rather large. The tail is not so long as in foxes, but almost equally bushy. All the jackals are of small size, as compared with wolves, seldom exceeding 15 inches in height at the shoulder. Their colors are buff and tawny, more or less grizzled; the tip of the tail is always dark. They make holes for themselves in the ground by burrowing, or take possession of such as already exist among rocks or ruins; and in these they spend the day, not venturing abroad till the dusk of evening. They hunt during the night in troops, and their howlings are described as peculiarly horrible. The notion that the J. is the *lion's provider*, and guides the royal beast to his prey, is one of the exploded fables of natural history, though it may have some foundation in the lion's occasionally following a troop of jackals in full cry, and appropriating 'the lion's share.' Jackals are not only ready to devour any animal



Jackal (*Canis aureus*).

which they can run down, but any carrion which they find. They follow armies; they dig up the ill-buried dead, they rob hen-roosts and outhouses; but they are as omnivorous as domestic dogs, eating farinaceous or other vegetable food when it comes in their way; they are even said, like foxes, to enter vineyards, and devour the grapes. They have a very offensive smell, which is said to diminish through domestication, and they are domesticated without difficulty. The name of COMMON J. is sometimes given to the species (*Canis aureus*) found in w. Asia: it is in general yellowish gray above, and whitish below, with yellow legs and thighs. But it is doubted if this animal was in ancient times plentiful, as it is now, in Syria and neighboring parts of Asia. It may have followed the track of armies from the farther east. It is nearly certain that it has, in comparatively modern times, become common in parts of Asia more northern than it formerly inhabited. Probably it is included under the name *fox* in the Hebrew Scriptures.

JACKALENT, n. *jăk'ă-lěnt'*, or JACK-O'-LENT: in *OE.*, a game during Lent, in which a puppet was thrown at—said to represent Judas Iscariot.

JACKANAPES—JACKSON.

JACKANAPES, n. *jăk'ă-nāps* [a corruption of *Jack-o'-apes*, a man who exhibits performing apes]: one who conducts himself as an ape; an impertinent fellow; a monkey.

JACKASS, n. *jăk'ăs* [*jack*, and *ass*]: the male ass: see **Ass**.

JACK'ASS, **LAUGHING** (*Dacelo gigantea*): bird of the Kingfisher family (*Halcyonidae*), and sometimes described in works on natural history as the Great Brown Kingfisher. It agrees very nearly with the kingfishers in its form and characters, but differs from them in its habits, not frequenting waters, nor feeding on fish, but preying on beetles, reptiles, and small mammalia. It is about 18 inches long, and mostly of brown color. It is common in Australia, and has received its name from the colonists, on account of the peculiar sounds which it utters. The natives call it *Gogobera*, apparently in imitation of its cry. It is of great use in preventing the excessive multiplication of reptiles and other pests. Its bill is powerful enough to crush the heads of snakes. It is easily tamed, and is sometimes kept in gardens, from which it does not seek to escape.

JACK'DAW [see **JACK**], or **DAW** (*Corvus monedula*): species of crow, smaller than the rook and carrion crow, its utmost length being only about 14 inches. It is black, with dark-gray neck. It is a common British bird, plentiful in parts of continental Europe, Asia, and n. Africa; not found in America. It builds its nest in holes of cliffs, ruins, etc. It frequents towns and villages, often making its nest in a chimney, dropping down stick after stick till some of them become fixed in their oblique descent; and on these, others are piled, affording a firm base for a nest of wool or other soft substance. The J. lays from four to seven (usually five) bluish-white eggs covered with dark-brown spots. Marvellous instances are recorded of the quantity of sticks employed to form a jackdaw's nest, in situations where an unusual height of pile was required. In 1842, a pair of jackdaws, in 17 days, made a pile ten ft. high in the staircase of the bell-tower of Eton College. The J. is a social bird. It is easily domesticated, and becomes very pert and familiar. It has considerable powers of mimicry, and even imitates the human voice.

JACKET, n. *jăk'ět*, or **JACK**, n. *jăk* [F. *jaquette*, a child's coat, the dim. of *jaque*, a jacket, a coat of mail: Sp. *jaco*, a soldier's jacket (see **JACK** 1)]: a homely substitute for a coat of mail; a military coat worn over the coat of mail; a short loose coat terminating at the waist. **JACK'-ETED**, a. *-ět-əd*, wearing a jacket; having a hollow vessel or covering outside the main vessel. **DUST ONE'S JACKET**, to give a beating to any one.

JACKSON, *jăk'son*: city, cap. of Jackson co., Mich.; on Grand River and the Mich. Central, Fort Wayne J. and Saginaw, Grand River Valley, J. Lansing and Saginaw, and a branch of the Mich. southern railroads; 37 m. s. of Lansing, 76 m. w. of Detroit, 94 m. s.e. of Grand Rapids. It is the centre of a lake country, there being about 300

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clear lakes varying in size from 10 to 1,000 acres in the co., and near the centre of the famous 'oak opening' district. The city is an important seat of manufacturing industries, and a centre for railway lines. The city is lighted with gas and electricity; has a costly system of Holly water-works; is well paved and sewered; contains 17 churches, model, high, grammar, and primary schools, business college, public library, 1 national bank (cap. \$100,000), 2 state banks (cap. \$200,000), and 2 private banks, and 2 daily and 4 weekly newspapers; is the seat of the main state penitentiary; has several bituminous coal mines and large agricultural interests; and beside the extensive manufactures in the penitentiary, and the main shops of the Mich. Central railroad, has 4 flour mills, 5 planing mills, 4 sash and blind factories, 7 carriage and wagon factories, 4 machine shops, 4 breweries, 3 agricultural implement works, pattern and fire-clay works, and chemical, cigar, and furniture factories. The site of J. was bought from the govt. 1829, first settlement made 1830, village laid out 1831, state penitentiary located 1835, village chartered 1842, city chartered 1857, boundaries enlarged 1869, first name Jacksonopolis, second Jacksonburg. Pop. (1850) 2,363; (1860) 4,799; (1870) 11,447; (1880) 16,105; (1890) 20,798; (1900) 25,180.

JACK'SON: city, cap. of Hinds co. and of the state of Miss.; on Pearl river and the Ill. Central, Chicago St. Louis and New Orleans, and Vicksburg and Meridian railroads, and recently built branches connecting it with Natchez and Yazoo City; 45 m. e. of Vicksburg, 96 m. w. of Meridian, 100 m. n.e. of Natchez, 183 m. n. of New Orleans. J. contains a federal building (cost \$100,000), the state capitol, state penitentiary, state institution for the blind, and state institution for the deaf and dumb; and 1 m. distant is the state lunatic asylum. The educational institutions are Alcorn Univ., 3 large public schools, 2 young ladies' institutes, boys' high school, state library, and numerous high-class private schools. There are 10 churches, city hall, 3 hotels, street railroad, steam fire dept., 1 state bank (cap. \$15,000), 3 foundries, cotton compress, cotton-seed oil factory, ice factory, and other industries. The U. S., circuit, chancery, and state supreme courts sit here portions of the year. Nearly all of J. was destroyed in the civil war; it was rebuilt more substantially than before, and now has a large cotton trade. Pop. (1870) 4,234; (1880) 5,204; (1890) 5,920; (1900) 7,816.

JACK'SON: village, cap. of Jackson co., O.; on the Ohio Southern and the Baltimore and Ohio Southwestern railroads, 30 m. n.e. of Portsmouth. It is in an iron and coal mining region, and has iron-furnaces, rolling-mills, machine-shops, foundries, planing-mills, and flour and woolen mills. Pop. (1890) 4,320; (1900) 4,672.

JACK'SON: city, cap. of Madison co., Tenn.; on the s. fork of Forked Deer river and at junction of the Mobile and Ohio and the Chicago St. Louis and New Orleans railroads; 80 m. s. of Columbus, 72 m. e.n.e. of Memphis, 108 m. s. of Cairo. It is the seat of West Tennessee Col-

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lege (founded 1844) and Southwestern Baptist Univ. (founded 1874); contains court-house, city hall, opera-house, 2 young ladies' seminaries, public schools, 11 churches, 2 national banks (cap. \$125,000), 1 state bank, extensive railroad workshops, 3 planing mills, flour mill, foundry, carriage factories, and other industries, and has a large cotton trade. Pop. (1890) 10,039; (1900) 14,511.

JACKSON, ANDREW, LL.D.: 7th pres. of the United States: 1767, Mar. 15,—1845, June 8; b. Waxhaw Settlement, Union co., N. C. He was son of Andrew J., who emigrated from Carrickfergus, Ireland, 1765, and Elizabeth Hutchinson, and both his grandfathers were engaged in the linen industry. His education was extremely limited, because of a lack of facilities and his own aversion to study: but he began his military career at an early age. In 1780, with his brother Robert, he volunteered for service with Gen. Sumter; was present at Sumter's fight at Hanging Rock; and in 1781, with his brother, was taken prisoner at Camden, and subjected to brutal treatment by British officers, till the mother secured the exchange of her sons. The same year his mother and brother died, and he was left destitute and friendless. He first apprenticed himself to a saddler, then taught school, and when 18 years old, began studying law with Spruce McCay in Salisbury, N. C. The following year he was admitted to the bar. In 1788 he removed to Nashville, then in western N. C., and was appointed public prosecutor for the district; 1790, when Tenn. was made a terr., Pres. Washington appointed him U. S. attor. for the district: and 1791 his prospects warranted his marriage, which he contracted with Mrs. Rachel Donelson Robards, under the belief that she had been divorced legally from her first husband. The divorce, however, was not completed till late in 1793; and 1794, Jan., J. had a second and legal ceremony performed. This incident furnished his enemies material for aspersing his character, but there was never a doubt of his blamelessness in this affair among those familiar with the facts or those to whom the evidences of his sincerity were submitted. As public prosecutor and U. S. attor. he was indefatigable, fearless, honest: wrongdoers were overawed by him, and the Indians who had long been the scourge of the district tested his bravery and concluded that he had a charmed life. He prospered with the general improvement of the terr., became widely known as a man of public affairs, and when congress passed the act (1796, June 1) for the admission of Tenn. terr. as a state, it was natural that he should be chosen a member of the convention to frame the first state constitution. In that body he was one of the most conspicuous figures, and his rare directing and executive abilities were constantly employed and appreciated. At the conclusion of the convention's work, J. was elected the first representative of the new state in congress, and after serving through one session, in which he opposed Jay's treaty with Great Britain and Hamilton's financial policy, and urged the completion of the frigates *Constitution*, *Constellation*, and *United States*, then on the stocks, and

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a cessation of further blackmail payments to Algiers, he was elected U. S. senator to fill a vacancy. He occupied his seat in the senate during the winter 1797-8 only, resigning 1798, Apr., on being appointed judge of the Tenn. supreme court. In 1801 he was elected maj.gen. of state militia; 1803 was unsuccessful applicant for appointment as first gov. of the newly acquired terr. of La.; and 1804 resigned his judgeship and retired from public life in order to apply himself to the restoration of his crippled financial affairs. He established himself on a plantation near Nashville which he called 'The Hermitage,' erected a cotton-gin, and began trading in New Orleans by flat-boat. While engaged thus in business J. was visited by Aaron Burr, 1805, and again 1806, who endeavored to gain J.'s interest and co-operation in his scheme for establishing a republic or empire in the s. or s.w. with New Orleans for its ultimate capital. J. at first received Burr cordially, but afterward suspecting his integrity, warned Gov. Claiborne of La. Terr. of Burr's intentions and tendered Pres. Jefferson the services of the state militia to suppress any overt act of treason. After Burr was formally charged by the pres. with treason, J. received orders from the govt. to hold his command in readiness for prompt action. Though he had first communicated the warning to the govt., placed himself and troops at the service of the federal authorities, and exerted himself with accustomed vigor to obey Pres. Jefferson's orders, there were many who questioned his loyalty and believed him leagued with Burr. J. was subpœnaed as a witness at Burr's trial in Richmond, but having openly denounced the charge of treason as ill-founded and called Pres. Jefferson a persecutor, he was not called to the stand.

Immediately after the declaration of war against Great Britain 1812, J. volunteered his services and those of 2,500 men; but it was not till late in the year and after the reverses to the Americans in the n.w. that he was called into the field. A fear that the British might attempt the capture of New Orleans led the govt. to order him to that point, and he started at the head of his militia 1813, Jan. The next month the new sec. of war directed him to disband his troops. Full of wrath for what he considered the incompetency of the war dept., he marched his men back to Tenn. and there released them from the special service. On Aug. 30 occurred the massacre of 400 refugee settlers by a force of 1,000 Creek Indians at Fort Mimms in s. Ala. As soon as the news reached Nashville, J. though suffering from a wound received in a duel with Thomas H. Benton, gathered a force of 2,500 volunteers, started after the Indians, defeated them at Tallusatches and Talladega, and 1814, Mar. 27, after being reinforced by a regt. of U. S. inf., gained a decisive victory over them at the Horse-shoe bend of the Tallapoosa river, known also as Tohopeka. For his victory over the Indians, which had an important bearing on the future conduct of the war, he was appointed maj.gen. in the regular army and given command of the milit. dept. of the south. In Aug. he

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seized Mobile, then claimed by both Spain and the United States, established headquarters there, and while seeking permission to attack the British at Pensacola was himself attacked by them at Mobile. He defeated them disastrously at his outer works, pursued them in retreat to Pensacola, stormed the town Nov. 7, and was planning an attack on Fort Barrancas—with which he hoped to capture the British fleet—when the enemy blew up the fort and hastily retreated. This expulsion of the British from Fla., where Spain had permitted them to establish their base of operations, left J. free to apply his whole energy to the defense of New Orleans. He reached the city Dec. 2, called out the whole of the state militia, declared martial law, and when the British, who landed their vanguard Dec. 16, had reached a point within 9 m. of the city on the 23d, he at once attacked them with an undisciplined land force and a small party in the schooner *Caroline*, and by preventing an advance on the city really gained the victory of New Orleans on that night. The British commander-in-chief, Sir Edward Pakenham, brother-in-law of the Duke of Wellington, landed on the 25th with reinforcements fresh from Wellington's army in the allied campaign against Napoleon, making the total British force about 12,000. He attacked J. on the 28th and was again repulsed, and again 1815, Jan. 1, with similar result. J. was reinforced Jan. 1 by 2,250 Ky. militia, nearly all unarmed and on the 6th Pakenham received an additional force of about 5,000 seamen and marines. J. then fell back to a canal 4 m. from the city, and constructed his famous line of fortifications near the Bienvenu and Chalmette plantations, giving him a line on the left bank of the Miss. river about 1 m. long, on which he posted 12 cannon. On Jan. 8, Pakenham led a direct assault upon the whole American line, and in half an hour the British were forced to retreat, leaving their commander dead with 2,600 of their number killed and wounded. The American loss was only 8 killed and 13 wounded. The battle was fought after peace had been signed at Ghent, but neither commander was aware of the fact.

In Apr. following, J. was appointed commander-in-chief of the s. div. of the United States, and received the thanks of congress. In 1818, Mar., with a force comprising regular troops, militia from Tenn. and Ga., and friendly Creek Indians, he began his campaign against the Seminole Indians in Fla., who had perpetrated gross atrocities on white settlers under the alleged inspiration of a horde of adventurers and filibusters. He captured St. Marks, hung two British subjects and two powerful Indian chiefs, whom he believed guilty of having incited the Indians to hostility against the United States and of having supplied them with the means of war, seized Pensacola, and in three months had the Indians under complete subjection. His execution of the British subjects led to bitter diplomatic correspondence between England and the United States, and his whole campaign was the subject of praise and censure in congress, but his oppo-

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nents were unable to adopt any report or resolution adverse to him. In 1819 he made a triumphal tour of the n. Two years after the cession of Fla. by Spain to the United States he was appointed gov. of that terr., but held the office only a few months; and soon afterward was tendered and declined the office of U. S. minister to Mexico. He then determined to retire to his farm for the remainder of his life.

About this time the desire of some of his admirers to bring him before the public as a candidate for the presidency began to assume definite shape. Personally he made light of the project. His friends urged his great popularity, and when the legislature of Tenn. formally nominated him for the office 1822, July 20, he gave probably his first serious thought to the possibility of his candidacy. In 1823 he was elected U. S. senator, and 1824 received the nominations of the federalist and republican conventions for pres. of the United States. In the election he received 155,872 popular and 99 electoral votes, to 105,321 and 84 for John Quincy Adams, 44,282 and 41 for William H. Crawford, and 46,587 and 37 for Henry Clay. This failure of the electoral college to elect, threw the election from among the three highest candidates into the house of representatives; and there through various partisan combinations 13 states voted for Adams, 7 for J., and 4 for Crawford. J.'s friends were indignant that the house should thus 'overthrow the manifest will of the people,' and J. believed through his life that he had been deprived of the office through a bargain between Clay and Adams, by which the former received the first place in the latter's cabinet. In the ensuing pres. election (1828) he received 647,231 popular and 178 electoral votes as democratic candidate, while Adams, then nominated as a national republican, had 509,097 popular and 83 electoral votes; and John C. Calhoun was re-elected vice-president. J.'s cabinet first comprised Martin Van Buren, N. Y., sec. of state; Samuel D. Ingham, Penn., sec. of the treas.; John H. Eaton, Tenn., sec. of war; John Branch, N. C., sec. of the navy; John M. Berrien, Ga., attor.gen.; and William T. Barry, Ky., postmaster-gen. His administration was characterized by vigorous proceedings and excitement from the start. It opened with the first national exemplification of 'practical politics,' the removal of office-holders merely because they belonged to the opposite party; and this innovation was followed by quarrels between the vice-pres. and the sec. of state in a struggle for the control of the patronage, by extreme social and political excitement growing out of the marriage of Sec. Eaton (see EATON, MARGARET L.), by the disruption of the cabinet over the Eaton incident, and the substitution (1831) of Edward Livingston, N. Y., for Van Buren, Louis McLane for Ingham, Lewis Cass for Eaton, Levi Woodbury for Branch, Roger B. Taney for Berrien, no change being made in the post-office bureau. To these incidents succeeded J.'s initial attacks on the U. S. Bank, his active animosity against Calhoun and his partisans, the non-confirmation of Van

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Buren as U. S. minister to England by the senate through Calhoun's negative vote, and the movement of Calhoun's friends in S. C. to nullify the acts of congress establishing a protective tariff.

In 1832 he reconsidered a previous determination to retire to private life at the close of his term of office, accepted a renomination, and in the election received 687,502 popular and 219 electoral votes, to 530,189 and 49 for Henry Clay; Van Buren was elected vice-pres. by 189 electoral votes. About the time of his re-election a convention authorized by the legislature of S. C. declared the tariff act null and void, made it unlawful for the authorities of either the general or state govt. to enforce the payment of duties within that state, and prohibited any appeal to the U. S. supreme court from the decisions of the state courts involving the authority of the ordinance, the validity of acts of the legislature giving effect thereto, or the validity of the congressional tariff act. The convention further declared that from the passage of the proposed ordinance the state would proceed to organize a separate govt., and that the ordinance should take effect 1833, Feb. 1. Dec. 11, J. issued his famous proclamation, defining the rights and duties of the general govt., reviewing the entire situation, and expressing his determination to execute the laws and to preserve the Union by all constitutional means. Congress passed an enforcing act to enable J. to execute the laws, and while Henry Clay was seeking to reconcile the hostile factions with his tariff compromise bill, J. ordered a naval vessel to Charleston to co-operate with the revenue officers if necessary, and instructed Gen. Scott to hold troops in readiness to march into S. C. should any overt act be committed. The operation of the nullifying ordinance was suspended to await the fate of the compromise bill in congress, and when that bill was adopted, the convention was reassembled Mar. 11, and the nullifying ordinance repealed, its promoters claiming the victory. While this controversy was in progress, J. resumed his attacks upon the U. S. bank. A bill to renew the charter of the bank was passed in both houses of congress 1832, and was vetoed by the pres., and congress failed to pass it over his veto. In 1833 he ordered the removal of all govt. money from the bank, for which he was formally censured by the senate, and the censure lay against him till a few days before his retirement from office, 1837, when the senate expunged it. His persistent fight against the bank led to a reorganization of his cabinet. William J. Duane, Penn., was appointed sec. of the treas.; McLane was transferred to the staff dept.; Livingston was sent as minister to France, and when Duane refused to remove the govt. deposits from the U. S. bank, J. removed him and transferred Taney to the office from that of attor.-gen., and appointed Benjamin F. Butler, N. Y., to the latter office. In 1834 McLane was succeeded as sec. of state by Senator John Forsyth, Ga.; Woodbury was transferred from the navy to the treas. dept. in place of Taney, whose nomination was not confirmed, Mahlon Dickerson,

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N. J., became sec. of the navy, and Butler was confirmed as attorney-general.

The entire administration of J. was as remarkable for its vigorous foreign policy as for the number of great events in the domestic history of the country. The extreme fearlessness and independence of his character were always on guard; he was passionate, impulsive, wrathful under opposition; quick in movement; determined in purpose. His powers of command were great; and considering the facts that he was the first pres. from the 'wild west,' and the first who had not received the advantages of a liberal education nor been favored with the accomplishments of polished society, that his official acts provoked the bitterest antagonism, that he never hesitated to assume extreme measures to compass what he believed to be a public benefit, and that, unlike the majority of his predecessors and successors, he had a wider and deeper popularity when he left office than when he entered it, his two terms as pres. form one of the most singular, effective, and influential periods in our national history. Beyond the events of his administration noted, treaties were concluded with Austria, Turkey, the two Sicilies (by which indemnity to citizens of the United States for commercial depredations by the king of Naples to the amount of \$1,720,000 were to be paid), Mexico, and France (by which under J.'s threats the sum of \$5,000,000 was paid to the United States as indemnity for commercial spoliation by French cruisers during the Napoleonic wars); the Cherokee, Choctaws, and Creek Indians were removed from Ga., Ala., and Miss., to the Indian Terr.; the national debt was extinguished; Ark. and Mich. were admitted into the union; railroads with steam propulsion were introduced; the screw propeller for ocean navigation, agricultural machines, and friction matches were invented; anthracite coal was discovered; the abolitionists first became a moral and political force in the country; the modern daily newspaper was established; and the great tide of foreign immigration set in. After his retirement from office 1837, Mar. 4, he returned to 'The Hermitage,' united with the Presb. Church, and spent the remainder of his life as a farmer, occasionally seeking the excitement his nature ever craved in the sports of the turf.

JACKSON, CHARLES THOMAS, M.D.: 1805, June 21—1880, Aug. 29; b. Plymouth, Mass.: scientist. While studying medicine he joined Francis Alger in making a geological and mineralogical survey of Nova Scotia 1827-9; graduated at the medical school of Harvard College 1829; studied medicine and geology in Europe 1829-32; assisted in more than 200 autopsies of cholera victims in Vienna 1831; became acquainted with recent discoveries in electricity and magnetism while in Paris; communicated plans for an electric telegraph to Samuel F. B. Morse 1832; constructed and worked a telegraph line 1834; was appointed state geologist of Me 1836; established a laboratory in Boston for instruction in analytical chemistry 1838; disputed Morse's claims to the invention of the telegraph 1837-8; was

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appointed state geologist of R. I. 1839; of N. H. 1840; planned the geological survey of N. Y.; explored the s. shores of Lake Superior, opened copper mines, and discovered iron mines 1844-5; and was U. S. surveyor of mineral lands in Mich. 1847-9. In the winter 1841-2 he became convinced that surgical operations could be performed painlessly by placing a patient under the influence of perfectly pure sulphuric ether by inhalation, and this form of anæsthesia was first applied successfully 1846. Despite a memorial to congress signed by nearly 200 physicians of Boston and vicinity, crediting the discovery of anæsthesia to J., and the award to him of the Montyon prize by the French Acad. of Sciences 'for the discovery of etherization,' the honor of the discovery was claimed by Dr. William T. G. Morton and Dr. Horace Wells, who had studied with him. The controversy continued through the lives of the three claimants, and their friends renewed it after their death. Costly monuments commemorating the discovery have been erected to Drs. Morton and Wells. J. received decorations from the govts. of France, Sweden, Turkey, Sardinia, and Prussia; contributed nearly 100 technical papers to the scientific journals of Europe and America, and was a member of the leading learned societies of the world.

JACK'SON, FORT—and FORT ST. PHILIP, Capture of: naval battle on the Mississippi river, 1862, Apr. These forts were erected on opposite banks of the Mississippi river at its last great bend, 78 m. below New Orleans, to protect the city against maritime attack. Fort J. was a bastioned, case-mated brick-work, rising 25 ft. above the water, on the right bank, built 1824-32, enlarged 1841. Fort St. P. on the left bank was smaller, had a low brick scarp, was built 1812-15, modified 1841. Together they mounted 115 guns, mostly smooth-bore 32 pounders. Early in 1861 the Confederates seized, strengthened, and garrisoned both forts, and stationed a naval fleet between them and the city. In Dec. following, the federal authorities determined to attempt the reduction of the forts and the capture of New Orleans, and organized a strong naval squadron for the attack and detailed a military force of 15,000 men to occupy the forts and city after capture. Capt. David G. Farragut (q.v.) was assigned to command the squadron, and Gen. Benjamin F. Butler the military force. Ship Island, 100 m. n.e. of the mouths of the Mississippi, was designated the common rendezvous. In 1862, Feb., Capt. Farragut sailed from Hampton Roads in his flagship *Hartford*, reached Ship Island on the 20th, and began preparing for the attack. His force consisted of 6 sloops of war, 16 gun-boats, 21 mortar schooners under Commander David Porter (q.v.), and 5 other vessels, carrying in all more than 200 guns. The mortar-boats made an ineffectual attack on the forts Apr. 18. Farragut held a counsel on the 20th, and determined to run past the forts and attack the Confederate fleet above. At 1:45 on the morning of the 24th the fleet started on its hazardous passage in two columns, each to engage one of the forts *en route*, and all but one vessel succeeded in running the terrific gauntlet. The fleet continued up the river, and on the 25th

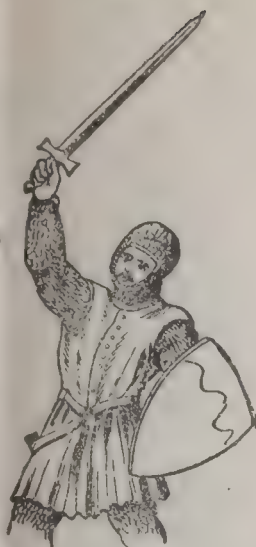
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silenced the Chalmette batteries, destroyed the Confederate squadron, and at noon had New Orleans at its mercy. Fort J. and Fort St. P. surrendered to Commander Porter Apr. 28, and the troops under Gen. Butler occupied New Orleans May 1. The Union loss was 37 men killed, 147 wounded, and one vessel sunk, the *Varuna*.

JACK'SON, HELEN MARIA FISKE (HUNT): 1831, Oct. 18—1885, Aug. 12; b. Amherst, Mass.: author. She was a daughter of Prof. Nathan W. Fiske, was educated in the Ipswich Female Seminary, Mass., married Maj. Edward B. Hunt, U. S. engineer corps (1822-63) 1852, Oct., and William S. Jackson of Colorado Springs 1875, Oct., and was appointed by the pres. a special commissioner to investigate the condition of the 'Mission' Indians in Cal. 1883. Prior to her second marriage she had gained distinction as a contributor to periodical literature as 'H. H.,' and after removing to Colo. she made a special study of the history of early Spanish missions and of the treatment of American Indians by the federal govt. Her *Century of Dishonor* (New York 1881) was a strong arraignment of the govt. for its Indian policy and led to her appointment as commissioner. She lived to publish but one work after investigating the condition of the 'Mission' Indians, *Ramona* (1884), another plea for just treatment. Her publications include *Verses* (1870, enlarged ed. 1874); *Bits of Travel* (1872); *Bits of Talk about Home Matters* (1873); *Bits of Talk for Young People* (1876); *Mercy Philbrick's Choice* (1876); *Hetty's Strange History* (1877); *Bits of Travel at Home* (1878); *Nelly's Silver Mine* (1878); *The Story of Boon* (1879); *Letters from a Cat* (1880); *Mummy Tittleback and her Family* (1881); *The Training of Children* (1882); *The Hunter Cats of Connorloa* (1884); and (posthumous) *Glimpses of Three Coasts, Sonnets and Lyrics*, and *Zeph* (1886); and *Between Whiles* (1887).

JACK'SON, JAMES: 1757, Sep. 21—1806, Mar. 16; b. Moreton-Hampstead, England: soldier. He removed to Savannah 1772, studied law, joined the patriots in repelling the British from Savannah 1776, Mar., commanded a company till Gen. Howard's expedition to Fla., was appointed brigade maj. of Ga. militia 1778, took part in the defense of Savannah and after its capture joined Gen. Moultrie in S. C., narrowly escaping execution as a spy while *en route*; killed Lieut. Gov. Wells and was himself wounded in a duel 1780, Mar, served with Col. Elijah Clark and Gens. Sumter and Pickens 1780-1, commanded the legionary corps of Ga. 1781, and received the keys of Savannah on the evacuation of the city by the British 1782, July 12. After the war the state presented him a residence in Savannah for his milit. services. He was appointed brig.gen. 1786, elected gov. but declined to serve 1788, was member of congress 1789-91, U. S. senator 1793-95 when he resigned, gov. 1798-1801, and U. S. senator from 1801, Dec. 7, till his death.

JACK'SON, JAMES, M.D., LL.D.: 1777, Oct. 3—1867, Aug. 27; b. Newburyport, Mass.: physician and author. He



Jack Coat.



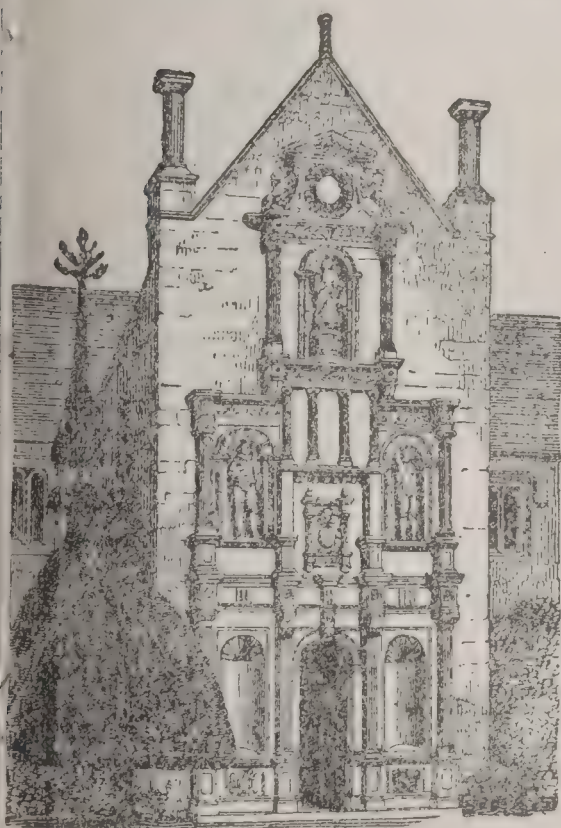
Jackdaw (*Corvus monedula*.)



Jack.



Jack-boot.



Jacobean Architecture—Waterston Hall, Dorset.



Jacobin.

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graduated at Harvard College 1796, studied medicine in Salem and London, began practicing in Boston 1800, aided Dr. Warren in establishing the Mass. Gen. Hospital in Boston, and became its first physician, was elected prof. of chemical medicine in the Mass. Medical School (afterward the medical dept. of Harvard Univ.) 1810, prof. of theory and practice 1812, and prof. emeritus 1835. He was pres. of the Mass. Medical Soc. several years, and a frequent contributor to medical and surgical periodicals. His publications include *On the Brunonian System* (1809); *On the Medical Effects of Dentition* (1812); *Eulogy on Dr. John Warren* (1815); *Syllabus of Lectures* (1816); *Text-book of Lectures* (1825-27); *Memoir of James Jackson, Jr.* (1835); and *Letters to a Young Physician* (1855).

JACK'SON, PATRICK TRACY: brother of Dr. James J.: 1870, Aug. 14—1847, Sep. 12; b. Newburyport, Mass.: merchant. He was educated in mercantile business; established himself in the India trade in Boston; joined his brother-in-law, Francis C. Lowell, in designing a model for a powerloom for manufacturing cotton, from which Paul Moody constructed the first machine of that kind made or used in the United States 1812; built in Waltham the first mill that produced finished cloth from raw cotton 1813; built several mills on the Merrimack river, organized the Merrimack Mfg. Co., and founded a settlement that became the city of Lowell; obtained its charter and superintended the construction of the railroad between Boston and Lowell (completed 1835); and actively promoted the moral and intellectual welfare of his numerous employés.

JACK'SON, THOMAS, D.D.: 1783, Dec. 12—1873, Mar. 11, b. Sancton, Yorkshire, England: Meth. minister and author. He learned the carpenter's trade when a boy, became an itinerant preacher in the Wesleyan connection 1804, labored in Lincolnshire, Lancashire, Yorkshire, and London till 1824, was then chosen connectional editor of the Wesleyan Church by the British conference, and was also tutor in the Richmond Theol. Institution from 1833 till his resignation from old age 1861. His publications include *Centenary of Methodism* (London 1839); *Library of Christian Biography*, 12 vols. (1837-50); *Life of Charles Wesley and Contemporary Events*, 2 vols. (1841); *Journal of Charles Wesley*, 2 vols. (1849); *Lives of Early Methodists*, 3 vols. (1849); *Duties of Christianity* (1857); *Providence of God viewed in the Light of Scripture* (1862); and *Curiosities of Pulpit Literature* (1868).

JACK'SON, THOMAS JONATHAN (STONEWALL JACKSON): 1824, Jan. 21—1863, May 10; b. Clarksburg, W. Va.: soldier. He was brought up on his uncle's farm; entered the U. S. Milit. Acad. 1842, and graduated without distinction 1846; was assigned to the 1st U. S. artil. as brev. 2d lieut., and ordered to Mexico, where he was attached to Magruder's battery of light artil.; served through the war and won the brevets of capt. and maj. for gallantry at Vera Cruz, Cerro Gordo, Contreras, Molino del Rey, Chapultepec, Churubusco and the city of Mexico; and was promoted 1st lieut. 1847, Aug. 20. In 1851 he was elected prof. of

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philosophy and artill. tactics in the Va. State Military Institute, and resigned from the army to accept the office 1852, Feb. 29. He retained this office till the secession of Va. 1861, Apr. 17, when Gov. Letcher appointed him col. of militia, and assigned him to command a force detailed to seize and occupy the U. S. arsenal at Harper's Ferry, in which he was successful May 3. On the organization of the army of Va., Gen. Joseph E. Johnston was appointed to the command, and J. was given the brigade of 'Valley Virginians,' the nucleus of the famous 'Stonewall brigade.' With this command he entered the first Bull Run battle, known to the Confederates as the first Manassas, and was the first to check the progress of the Union army after it had turned the Confederate line. There was a general rally of the Confederates on his line at a critical moment, and the imminent disaster to the Confederate army was speedily turned to victory. For his service on this field he was promoted maj.gen. Sep., and assigned to command in the lower Shenandoah valley, then threatened by a Union army, November. Early in 1862, Mar., Gen. Banks with 5,000 troops marched against his position at Winchester from the Potomac, and J., under instructions not to risk his army of 3,400 men, retreated with Banks in pursuit as far as Strasburg. When Banks returned to Winchester and began sending his troops elsewhere, J. made a forced march toward his old position, and encountered the Union army at Kernstown, Mar. 23. A vigorous engagement ensued, in which the Confederates were defeated, but Banks, not appreciating the situation, returned to the valley, leaving J. to retire up the Shenandoah and establish himself in the Blue Ridge Mountains near Swift Run Gap. About a month later Banks was at Harrisonburg with 20,000 men, Frémont was moving toward Staunton with 15,000 men, McDowell was on the Rappahannock threatening Richmond with 30,000 men, and McClellan was advancing up the peninsula toward the Confederate capital. To add to the perils of J.'s army, a Union force under Gen. Milroy was discovered marching across the mountains from the w. for the purpose of uniting with Banks, then seeking another engagement with J. At this juncture J. was placed in command of all the Confederate troops in n. Va., Gen. Ewell with 8,000 men was ordered to his relief, and Gen. Edward Johnson with 3,000 men hastened toward Staunton, where the right of Frémont's line was supposed to be in position. J. then had about 19,000 men under him. Ordering Ewell to hold Banks, J. joined Johnson, and by a sudden and circuitous march struck Milroy's command in the village of McDowell, May 8, and after 4 hours' fight defeated it. He then returned to the valley, joined Ewell's column, marched day and night through the Luray valley, surprised Banks at Front Royal May 23, defeated him at Winchester May 25, and drove him beyond the Potomac. These actions placed 2,300 prisoners and more than 9,000 stands of arms in J.'s hands. While he was striving to send his captures to the rear, the Federal authorities summoned McDowell from Fredericksburg and Frémont from W. Va., to attack

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his rear, and Banks and Sigel to move down upon him from the Potomac. On May 30 J. was at Winchester apparently surrounded. The next morning he marched rapidly to Strasburg, between the positions of McDowell and Frémont, held both armies at bay till his prisoners and captured stores were well in the rear, then detaching Ewell to hold Frémont, he retreated up the valley to the White House, burned the bridge there, passed around Shields's division of McDowell's army which had pursued him, and established himself at Port Republic, between Shields and Banks, and near Ewell. On June 8 Ewell engaged Banks at Cross Keys and defeated him, and June 9 J. defeated Shields, who had advanced on Port Republic, before Frémont could come to his assistance. After this the Union troops retreated to the lower Shenandoah, while J. hastened to join Lee for an attack on McClellan near Richmond. On June 27 he executed a flank movement and struck McClellan's right at Cold Harbor (Gaines' Mills), and was afterward detached by Lee and ordered to advance to check the Union army under Gen. Pope, then hastening along the Piedmont region to the Rapidan, while Lee watched McClellan. J. crossed the Rapidan Aug. 9, defeated Banks at Cedar Run, and, being joined by Longstreet's corps, was ordered Aug. 25 with 25,000 men to pass Pope's right flank, seize the depot at Manassas, and break up his communications. When they met Aug. 29, both armies fought desperately, but J. held his ground till Lee arrived with the main Confederate army and accomplished the defeat of Pope Aug. 30, in the second Bull Run or Manassas battle. On Sep. 15 J. captured Harper's Ferry with 13,000 prisoners and 70 cannon, reached Sharpsburg the next day, and on the 17th commanded the left wing of the Confederate army in the battle of Antietam. On Dec. 13 he commanded the Confederate right in Burnside's attack on Lee at Fredericksburg, repelled the attack of the Union division under Gen. Franklin, and was promoted lieutenant-general. 1863, May 1, he offered battle to Gen. Hooker, whom he encountered coming from the Chancellorsville wilderness, and when the latter retreated into the wilderness, he made a forced flank movement around the right of the Union army, and late in the following evening encountered and attacked Gen. O. O. Howard's corps (Hooker's right) on the old turnpike. He defeated Howard in half an hour, and then the movement of his own army was suddenly checked by a combined cavalry and artillery maneuver planned by Gen. Alfred Pleasonton. Shortly afterward J. rode beyond his lines to reconnoitre, and his escort being mistaken for Union cavalry, was fired upon by his own men. He received 3 bullets, lost his left arm by amputation, and was doing well when pneumonia supervened May 7, and caused his death three days afterward. English admirers caused a bronze statue of J. to be erected in Richmond 1875. J. was a man of great devoutness, and of stern moral principle.

JACKSON, WILLIAM: 1730, May—1803, July 12; b. Exeter, England: composer. He studied music with Silvester, organist of Exeter Cathedral, and Travers, organist

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of King's Chapel, London; became a teacher of music and subchanter in the cathedral on his return to Exeter; and was appointed organist, lay-vicar, and master of the choristers of the cathedral 1777. He composed numerous songs, canzonets, and trios that became very popular; published the dramatic pieces *Lycidas* (1767), *The Lord of the Manor* (1780), and *The Metamorphoses*, comic opera (1783); and was author of *Thirty Letters on Various Subjects* (1782), *Observations on the Present State of Music in London* (1791), and *The Four Ages, together with Essays on Various Subjects* (1798).

JACKSONVILLE, *jăk'son-vîl*: city, cap. of Duval co., Fla.; on St. John's river, 25 m. from its mouth, and several railroads operated by the Fla. Railway and Navigation Co.; 30 m. s.w. of Fernandina, 125 m. s.s.w. of Savannah, 155 m. e. of Tallahassee. It is laid out on the rectangular plan with wide, well-shaded streets; is connected with several beautiful suburban villages by ferry; has a large domestic and foreign trade in lumber (50,000,000 ft. shipped annually), naval stores, cotton, sugar, fruit, fish, early vegetables, and other commodities; and has steamboat connection with Charleston, Savannah, St. Augustine, Palatka, and Enterprise. It contains 10 churches (the Rom. Cath. Church of the Immaculate Conception burned during the civil war, was rebuilt and opened 1873, Nov. 16), 2 large public schools (one white, one colored), Stanton Institute, Rom. Cath. acad., 3 nat. banks (cap. \$300,000), 1 state bank, 1 private bank, and several weekly and tri-weekly newspapers, and is a popular winter resort for invalids from the n. states. Sessions of the U. S. circuit and district courts for the n. district of Fla. are held here annually. 1888, July 28, a case of yellow fever was reported in J. and Aug. 10 an epidemic was proclaimed, which soon assumed frightful proportions. The Auxiliary Sanitary Assoc. was organized promptly and worked without outside relief till Sep. 5, and from the latter date till the disappearance of the fever in Dec. the contributions from all parts of the country amounted to \$506,145, and the expenditures to \$481,392, leaving a balance of \$24,752, a part of which was telegraphed to Johnstown. Penn. (a v) as soon as the news of its disaster reached J. Pop. (1890) 17,201; (1900) 28,429.

JACK'SONVILLE: city, cap. of Morgan co., Ill.; on Mauvaisterre Creek, a tributary of the Ill. river, and on the J. div. of the Chicago and Alton, the Toledo, Wabash and Western, the Peoria, Pekin and J., and the J. Northwestern and Northeastern railroads; 30 m. w. by s. of Springfield, 67 m. n. of Alton, 90 m. n. of St. Louis, 200 m. s. s. w. of Chicago. It is beautifully situated on an undulating prairie; is laid out in wide, shaded streets; has efficient street railroad, gas, water, sewage, and fire systems; and contains city hall, co. court-house, opera-house, 22 churches, and state institutions for the blind, feeble-minded, deaf and dumb, and insane. Here are also Ill. College (Congl.), organized 1830, Ill. Female College (Meth. Episc.), organized 1847, J. Female Acad., Young Ladies Athenæum, Ill. Con-

JACMEL—JACOB.

servatory of Music, Y. M. C. A. with costly building, commercial college, high and graded schools, Lutheran orphan asylum, private retreat for the insane, and public library with free reading-room. There are 2 national banks (cap. \$400,000), 4 private banks, and 2 daily and several weekly papers. The industries comprise several flour mills, planing mills, foundries, machine-shops, carriage and soap factories and woolen mills. Pop. (1870) 9,203; (1880) 10,927; (1890) 12,935; (1900) 15,078.

JACMEL, or JACQUEMEL, *zhák-mě'l'*: city and port of Hayti, at the head of a bay of the same name on the s. coast, 30 m. s.w. of Port-au-Prince, lat. 18° 13' n., long. 72° 33' w. It is divided into two towns, the upper known locally as Belair; has a commodious harbor, but subject to strong s. winds and a heavy in-shore sea, is a call-station for W. India mail steamers; and has considerable trade with the United States. During the closing scenes of the revolution in Hayti 1889, many people of Port-au-Prince fled thither to escape the horrors of bombardment. Pop. about 6,000.

JACOB, *jā'kob* [Heb. *Yaakob*, meaning, according to Gen. xxv. 26, and xxvii. 36, 'one who seizes the heel,' or 'supplants']; later called also ISRAEL: one of the three chief Hebrew patriarchs: second son of Isaac and Rebekah, and on account of his docile, domestic character the favorite of his mother. His conduct toward his brother Esau in regard to the birthright (Gen. xxvii.) shows his original character as crafty, selfish, and deceitful. The Divine discipline dealt with him for many years with afflictions which were in the line of his sins. After an exile of 21 years in Padanaram, whither he had fled to escape the vengeance of Esau, he returned to Canaan with two wives (Rachel and Leah), two concubines (Bilhah and Zilpah), 12 sons (fathers of the subsequent Hebrew tribes), and a daughter named Dinah, who was the unintentional cause of a vindictive massacre of the Shechemites by her brothers Simeon and Levi. In his 130th year, he and his family went down to Egypt, where his favorite son Joseph had become a great man under Pharaoh. Here he lived 17 years longer in the land of Goshen, and died in his 147th year. His body was embalmed, carried back to Canaan with great state by his sons, and there buried near Hebron. This patriarch is a striking instance of a man with signal infirmities of nature, providentially chastened and trained through many years, and through grievous discipline brought at last into a proper manhood. Esau's character was far more attractive socially, with its careless generosity; yet while Esau lived for the present and was controlled by his appetites, J. was open to a development of spiritual motives and forces whereby he could be taught the great lesson of faith in an unseen God. His history is the record of the processes and the result of this lesson. Its end was peace. There are numerous legends about J. in Rabbinical and Patristic and in Mohammedan literature.

JACOB—JACOBI.

JA'COB OF EDES'SA: one of the most eminent scholars of the 7th c., born in 'Indaba, near Antioch, educated in Alexandria, appointed bp. of Edessa 684, and often confounded with Jacob Baradaeus, also called Zanzalus, founder of the sect of Jacobites and likewise bp. of Edessa. J. resigned his see 688 on account of disagreements with his clergy, spent 20 years in the monasteries of Eusebona and Tell'eda, and consented to resume office on the death of his successor, but died on the way to Edessa, 708, June 5. During his monastery life he applied himself to sacred and classical study, corrected the Syriac version of the Old Test., translated numerous Greek works into Syriac, learned the Syriac, Greek, and Hebrew languages; and prepared a Syriac grammar, beside works on theology, philosophy, and history.

JA'COB OF HUN'GARY (THE MASTER): organizer of a religious movement in France to secure the liberation of King Louis IX., who had been captured by Mussulmans in Egypt 1244, while leading the 7th crusade. J., claiming divine inspiration and preaching through the provinces, gathered 30,000 shepherds and peasants in Flanders, secured arms in Amiens, and entered Paris at the head of a mob of 100,000 men. There J. assumed sacerdotal functions in the Church of St. Eustache, while his followers committed barbarous excesses, till he sent them in separate bands and by different routes toward the Holy Land. He was killed by order of the queen while haranguing a crowd of his followers, all of whom soon afterward disappeared from public view.

JACOBEOAN, n. *jăk-o-bē'an*, or **JACOBIAN**, n. *jă-kō'bī-an* [*L. Jacobus*, James]: in *arch.*, term sometimes applied to the style of architecture prevailing during the later years of the reign of Elizabeth and that of James I. It differs from the Elizabethan or Tudor style, in having a greater admixture of Italian, largely owing to the influence of the Italian architect Palladio.

JACOBI, *ja-kō'bī*, Ger. *yā-kō'bē*, **ABRAHAM**, M.D.: physician and author: b. Hartum, Westphalia, Germany, 1830, May 6. He was educated in the universities of Greifswald, Göttingen, and Bonn, received his degree from Bonn 1851, was connected with the radical movement of that period, and was convicted of treason the same year and imprisoned till 1853, when he came to the United States and settled in New York. He was prof. of diseases of children in the New York Medical College, 1861-70, and in the medical dept. of the Univ. of the city of New York, 1867-70, became clinical prof. of the same branch in the College of Physicians and Surgeons 1870, was elected pres. of the New York Pathological, New York Obstetrical, County Medical, and State Medical (1882) Soc., and the New York Acad. of Medicine 1885, and has for many years been visiting physician to the German hospital, Mount Sinai hospital, Hebrew orphan asylum, and the Infant's hospital. His publications include *Contributions to Midwifery and Diseases of Women and Children* (New York 1859); *Dentition*

JACOBI.

and its Derangements (1862); *The Raising and Education of Abandoned Children in Europe* (1870); *Infant Diet* (1874); and *Treatise on Diphtheria* (1880), beside many articles in medical journals and other publications.

JACOBI, *yá-kó'bē*, FRIEDRICH HEINRICH: 1743, Jan. 25—1819, Mar. 10; b. Düsseldorf: German philosopher. He was educated at Frankfurt, whence he went to Geneva to prepare himself for a mercantile career. In 1770, he was appointed councilor of finance for the duchies of Berg and Jülich, and having married a lady of fortune, applied himself to literary pursuits. In 1804, he removed to Munich, where he had been appointed a member of the newly instituted Acad. of Sciences, of which he became president 1807. His writings consist partly of romances, and partly of philosophical treatises. The principal are *Woldemar* (2 vols. Flensb. 1779), *Eduard Allwoil's Briefsammlung* (Bresl. 1781), both philosophical romances; *Ueber die Lehre des Spinoza in Briefen an Mendelssohn* (Bresl. 1785), a polemic against logical methods of speculation in the search after the higher class of moral truths; and *David Hume über den Glauben, oder Idealismus und Realismus*, in which the same polemic is continued, but in which an attempt is also made to demonstrate that the mind or nature of man possesses another faculty—viz., faith, or moral intuition, by which the higher truths are as firmly grasped, as, by faith in the perceptions of the senses we, so to speak, lay hold on the phenomena of the material world. Herein lies the difference between Kant (and indeed the whole school of German idealists) and J.; the former appear to admit only the 'subjective' reality of such conceptions as God, the soul, immortality, etc.; the latter claims for them an 'objective' reality. Kant denies that the 'faculty of faith' gives us 'knowledge,' in the strict sense of the word; J. affirms that it does. One of his treatises, *Von den göttlichen Dingen und ihrer Offenbarung* (Leip. 1811), was the occasion of a rather sharp controversy between him and Schelling. J. was not a systematic thinker, and did not form a school. He varied sometimes in his use of such terms as reason, revelation, belief. In his scheme appear the germs of principles afterwards developed in Sir. William Hamilton's philosophy. J.'s weakness is in his denial that external things are known to man by an immediate perception in which there is a combination of intuition and belief. He was, as might be expected, deficient in the qualities that he despised—method and logical sequence; but his style is remarkably good, possessing both warmth and clearness. It has been compared by his countrymen to that of Plato. His collected works appeared at Leipsic (6 vols. 1812–24).

JACOBI, KARL GUSTAV JAKOB: 1804, Dec. 10,—1851, Feb. 18; b. Potsdam, Prussia; of Jewish parentage: mathematician. He studied at the Univ. of Berlin, and 1829 became prof. at Königsberg, and published his celebrated work *Fundamenta nova Theoriæ Functionum Ellipticorum*, for which he received the great medal of the Acad. of Sci-

JACOBI—JACOBINS.

ences of Paris; the work, however, contains only a portion of his researches on Elliptic Functions. In 1842, he with his wife visited England and Scotland. Soon after his return, his health broke down, he started for Italy, and on his return, he was removed from Königsberg to Berlin, where he died of small-pox. J. wrote a great number of memoirs on different branches of higher mathematics, chiefly Series and Definite Integrals, and was a regular contributor to the celebrated *Journal für reine und angewandte Mathematik* of Crelle.—His brother MORITZ HERMANN J. (1801–74), was distinguished as a civil engineer, and for his inventions and discoveries in telegraphy and electrotyping.

JACOBI, MARY (PUTNAM), M.D.: b. London, 1842, Aug. 31; daughter of George P. Putnam and wife of Dr. Abraham J. She removed to New York 1848; received a grammar school education; studied medicine in the Woman's Medical College, Philadelphia, and pharmacy in the New York College of Pharmacy, of which she was the first woman graduate; was the first woman admitted to the École de Médecine, Paris (1868), and the first woman graduate (1871); began practicing in New York; married Dr. Abraham J. (q.v.), 1873; was dispensary physician in Mount Sinai hospital 12 years; became prof. of materia medica in the New York Infirmary for Women and Children, and in the New York Post-graduate Medical School; was elected pres. of the Assoc. for the Adv. of the Med. Education of Women, and received the Boylston prize at Harvard Univ. for her essay on *The Question of Rest for Woman during Menstruation*, 1876; and beside papers in the *Medical Record* and *Journal of Obstetrics*, has published *The Value of Life* (New York 1879), *Cold Pack and Anæmia* (1880), *Studies in Endometritis* (1885), *Infantile Paralysis*, *Pseudo-Muscular Hypertrophy*, and *Hysteria and Other Essays* (1888).

JACOBIN, n. *jăk'ô-bîn* [from the place of meeting in an old monastery of the *Jacobins*—from the name of the church *St. Jacques* at Paris: L. *Jacōbīs*, Jacob or James]: formerly, a friar of the order of St. Dominic.—Name also of a party of violent revolutionists in France during the first Revolution; a radical or levelling politician of the character of the French Jacobins (see JACOBINS). JAC'OBINISM, n. *-izm*, the principles of the Jacobins. JAC'OBIN'ICAL, a. *-i-kāl*, having the character of a Jacobin.

JACOBINS, *jăk'ô-bînz*, F. *zhă-kŭh-băng*: members of a political club which had very great influence during the French Revolution. It was originally called the *Club Breton*, and was formed at Versailles, when the States-general assembled there 1789. It then consisted exclusively of members of the States-general, all more or less liberal or revolutionary, but of very different shades of opinion. On the removal of the court and national assembly to Paris, this club began to acquire importance. It now met in a hall of the former Jacobin convent in Paris, whence it received the name of the Jacobin Club, given to

JACOBITE—JACOBITE CHURCH.

it first by its enemies; the name which it adopted being that of the *Society of Friends of the Constitution*. It now also admitted members who were not members of the national assembly, and held regular and public sittings. Its influence over the agitation, of which the chief seat and focus was in the capital, extended over the whole country through affiliated societies. Its power increased, until it became greater than that of the national assembly. It formed not less than 1,200 branch societies or clubs throughout France. When the national assembly dissolved itself 1791, Sep., the election of the legislative assembly was accomplished mainly under the influence of the Jacobin Club. Almost all the great events which rapidly followed were determined by the voice of the club, whose deliberations were regarded with more interest than those of the legislative assembly. It reached the zenith of its power when the national convention met 1792, Sep. The agitation for the death of the king, the storm which destroyed the Girondists, the excitement of the lower classes against the *bourgeoisie* or middle classes, and the reign of terror over all France, were the work of the Jacobins. But the overthrow of Robespierre 1794, on the 9th Thermidor gave the death-blow to the Jacobin Club also. The magic of its name was destroyed; and the Jacobins sought in vain to contend against a reaction which increased daily both in the convention and among the people. A law of Oct. 16 forbade the affiliation of clubs, and the Jacobin Club was finally closed 1794, Nov. 9. Its place of meeting was soon afterward demolished.—The term Jacobin is often used to designate persons of extreme revolutionary sentiments.

JACOBITE, n. *jāk'ō-bīt* [*Jacōbūs*, James, the Latinized form of the Heb. *Ja'acob*, Jacob, James]: one attached to the cause of King James II., particularly after his flight and abdication, and to his line: **ADJ.** of or belonging to the Jacobites. **JAC'OBITISM**, n. *-izm*, the principles of the Jacobites. **JAC'GBIT'ICAL**, a. *-bīt'ī-kāl*, belonging to the Jacobites. See **JACOBITES** (in British history). **JACOBITES**, in *chh. hist.*: see **JACOBITE CHURCH**: **MONOPHYSITES**.

JAC'OBITE CHURCH, or **JAC'OBITES**: name denoting specially the Monophysites now thinly scattered in an ecclesiastical organization over Syria, Mesopotamia, and Chaldea. The name is from a Syrian monk Jacobus Baradæus (Bar-dai), who in the reign of Justinian formed the Monophysite recusants of his country into a single party. This church rejects the decrees of the Council of Chalcedon (q.v.) and accepts those of the second council of Ephesus (q.v.). The Jacobites at present number about 40,000 families (prob. 225,000–250,000 persons), and are subject to two patriarchs, appointed by the sultan—one resident at Diarbekir, with the title of Patriarch of Antioch, the other at Saphran, under the style of Patriarch of Jerusalem.—The Coptic, Abyssinian, and Armenian churches also are sometimes called Jacobites, but not with strict propriety, though they all are Monophysites. See **MONOPHYSITES**: **EUTYCHES**.

JACOBITES—JACOB'S LADDER.

JACOBITES, *jäk'o-bitz*, in British History: adherents of the male line of the House of Stuart in Great Britain and Ireland after the Revolution of 1688. Many of the most devoted royalists followed James II. into France; but the greater part of the J. remaining in their native land made more or less show of submission to the new government, while they secretly supported the cause of the Pretender. Their intrigues and conspiracies were incessant till the middle of the 18th c. Their hostility to the House of Hanover broke out in rebellions in 1715 and 45, in consequence of which not a few of them lost their lives upon the scaffold, titles were attainted, and estates confiscated. After 1745, their cause became so obviously hopeless, that their activity mostly ceased; and it was not long till it ceased altogether, and those who still retained their attachment to the exiled family acquiesced in the order of things established by the Revolution. In Scotland, the hopes and wishes of the Jacobite party were expressed in many spirited songs, which form an interesting part of the national literature. See the *Cullodon Papers* (Lond. 1815); Hogg's *Jacobite Relics* (2 vols. Edin. 1819); and Chambers's *Jacobite Memoirs* (Edin. 1824).—The J. of England were called also *Tories*. They were generally distinguished by warm attachment to the Church of England, as opposed to all dissent, if they were not members of the Church of Rome; and held very strongly the doctrine of *non-resistance*, or the duty of absolute submission to the king. The J. of Scotland also were generally Episcopalians and Rom. Catholics. Macaulay, however, points out that the Highland clans which espoused the Jacobite cause did so on other grounds than the English J., and were far from having previously received the doctrine of non-resistance. In Ireland, the Jacobite cause was that also of the Celts as opposed to the Saxons, or the native race against the English *colonists*, and of the Rom. Catholics against the Protestants. These diversities prevented a complete union, and greatly weakened the Jacobites.—See STEWART, FAMILY OF: JAMES II., of England.—See *History of the Rebellion in 1745*, by R. Chambers.

JACOBS, HENRY EYSTER, D.D., LL.D.: educator and author: 1844, Nov. 10— ————; b. Gettysburg, Penn. He was educated at Pennsylvania Coll. and at Theol. Sem.; was tutor for 3 years in Penn. Coll.; taught for several years in western Penn., and in 1870 became prof. of Latin and of history in Penn. Coll., and was afterward transferred to the Greek chair; in 1883 became prof. of systematic theol. in the Theol. Sem. in Philadelphia. Among his works is *The Lutheran Movement in England* (1890).

JACOB'S-LADDER, n. *jä'köbs-läd'dër* [*Jacob*, and *ladder*]: plant, supposed to be so called from its successive pairs of leaflets; the *Pölēmōnīūm cærulēūm*, or *Greek Valerian*, Ord. *Pölēmōnīūcææ*. It is a herbaceous perennial plant of central and southern Europe, and temperate parts of Asia and N. America. It is common in flower-gardens in Britain. It has pinnate leaves, with ovato-lanceolate

JACOB'S LADDER—JACOVA.

leaflets, a smooth stem 1-2½ ft. high, and a terminal raceme of bright blue (sometimes white) flowers, with wheel-shaped 5-lobed corolla. Great medicinal virtues were formerly ascribed to it, but the only quality which it seems to possess is a slight astringency.

JACOB'S LADDER: on shipboard, short rope-ladder with wooden steps, to give easy access to the shrouds and tops.—**J. L.** is the name also of an apparatus for raising light weights to a considerable height: one form, much used in breweries and distilleries, is an endless revolving chain of buckets, filling themselves at the bottom of the chain, and emptying themselves at the top.—**J. L.** is the name also of a cross-staff for taking altitudes.

JACOB'S STONE: a stone carried off from Scone in Scotland by Edward I. (see **SCONE**), now inclosed in the coronation chair, Westminster—traditionally but absurdly said to have been the stone on which Jacob leant his head when he dreamt of the ladder reaching to heaven.

JACOBUS, n. *jă-kō'būs* [**L.** *Jācōbus*, James]: a gold coin, in value about 25 shillings, so called from James I., in whose reign it was first coined.

JACONET, or **JACCONET**, n. *jăk'ō-nět* or *zhăk'ō-nět* [**F.** *jaconas*]: a description of muslin made in France, principally used for children's collars and dresses; also called *nainsook*.

JACOTOT, *zhâ-ko-tō'*, **JEAN JOSEPH**: 1770, Mar. 4—1840, July 30; b. Dijon, France: inventor of the 'Universal Method' of education. He served in the army, but 1790 was appointed by Napoleon, first to the chair of mathematics in the Normal School, afterward sec. to the minister at war, and a director of the Polytechnic. He retired to Belgium 1815, where he was appointed lecturer on French literature in the Univ. of Louvain, and afterward director of the military Normal School. He returned to Paris 1838, and died there. His system, propounded in general rules, which, however, without his own explanation, would have been quite unintelligible, appears to consist in directing the student's exertions to particular *subjects*, encouraging and inciting him in every possible manner to make use of his mental powers, and there leaving him; the teacher is on no account to become an expounder, but after setting the student on the right track, is to leave him to explain away his own difficulties. J.'s method resembled that of Hamilton (see **HAMILTONIAN SYSTEM**), and, like it, was crude and one-sided. The valuable elements of it have been incorporated in the more rational and catholic methods of recent times. The wonderful results said to have been produced by J. are, so far as real, to be attributed to the exceptional zeal and energy that always characterize the apostle of a new system, as much as to the system itself.

JACOVA, or **YAKOVA**, *yâ-kō'vâ*: town of Albania, Turkey, on the White Drin, 20 m. n.w. of Prisrend. Pop. 18,000.

JACQUARD LOOM.

JACQUARD LOOM, *jăk-kărd'*: loom fitted with the Jacquard apparatus for pattern-weaving. This apparatus was the invention of Joseph Marie Jacquard (1752-1834), ingenious Frenchman, native of Lyon, who, being necessitated to carry on the weaving business of his father, for which he had a distate, and, according to some accounts, still further stimulated by reading an account in an English newspaper of the offer of a premium for any person who should invent a machine for weaving nets, set his wits to work to improve the existing machinery for weaving. He was in great poverty, and was compelled to become a lime-burner at Bresse while his wife supported herself by plaiting straw. He persevered, however, till, by his invention, he enabled an ordinary workman, with comparative ease, to produce the most beautiful patterns in a style which had only previously been accomplished with almost incredible patience, skill, and labor. Nevertheless, the reception of his great invention by the public was most dispiriting, for though rewarded with a small pension by Napoleon, the silk-weavers themselves offered such violent opposition to its introduction, that on one occasion he narrowly escaped with his life, and his machine was broken up by the body of men who, under the title of the Conseil des Prud'hommes, were appointed to watch over the interests of the Lyonnese traders, and it was destroyed in the public square of Lyon. To use Jacquard's language: 'The iron was sold for iron, the wood for wood, and he himself was delivered over to universal ignominy;' nevertheless, on that same spot where the machine was publicly destroyed, a statue now stands, to show the gratitude of a more enlightened generation. The inventor lived to see his loom in universal use, and the prosperity of his native city greatly increased by its means. It brought him also substantial pecuniary reward.

Even after the partial adoption of his machine, which was patented, Jacquard had numberless annoyances to contend with; the workmen, as usual, opposed ignorant prejudice to its progress, and their masters, little better, took it up with so little earnestness, that it failed in many instances, and actions were entered against the patentee for injury done to material, etc. The value of the invention was, however, too great to admit of its being long suppressed, and when it had once gained fair recognition, it affected a complete revolution in the art of weaving, especially in the finer kinds of figured silk fabrics.

The Jacquard apparatus can be adjusted to almost every kind of loom, its office being merely to direct those movements of the warp-threads which are required to produce the pattern, and which previously were effected by the weaver's fingers; its arrangements generally are very complicated, but its principles are remarkable for extreme simplicity and certainty.

In ordinary weaving, the alternate threads of the warp, or longitudinal arrangement, are raised so as to enable the weaver to throw the shuttle containing the weft-thread

JACQUARD LOOM.

transversely across from his right to his left hand between the warp threads so raised and those left at rest. When the weft is so passed through, the raised warp threads are lowered, and the other set raised, the shuttle being then passed through from left to right. This is the most simple idea of plaiting or weaving. If, however, a pattern has to be produced either in plain materials or varied colors, it is necessary, instead of raising and depressing all the threads of the warp, in two sets, as above described, to raise only such as are required to develop the various parts of the figure, and this, of course, must be done with great exactness, as the position of every thread tells upon the formation of the pattern. The apparatus of Jacquard is for the purpose of regulating these movements, and its mode of action is as follows:

The warp-threads are each (as in the common weaving process) passed through a small loop in the lifting thread, so as to be raised by means of the treadles, which act directly upon the lifting bars; these lifting threads (fig. 1,

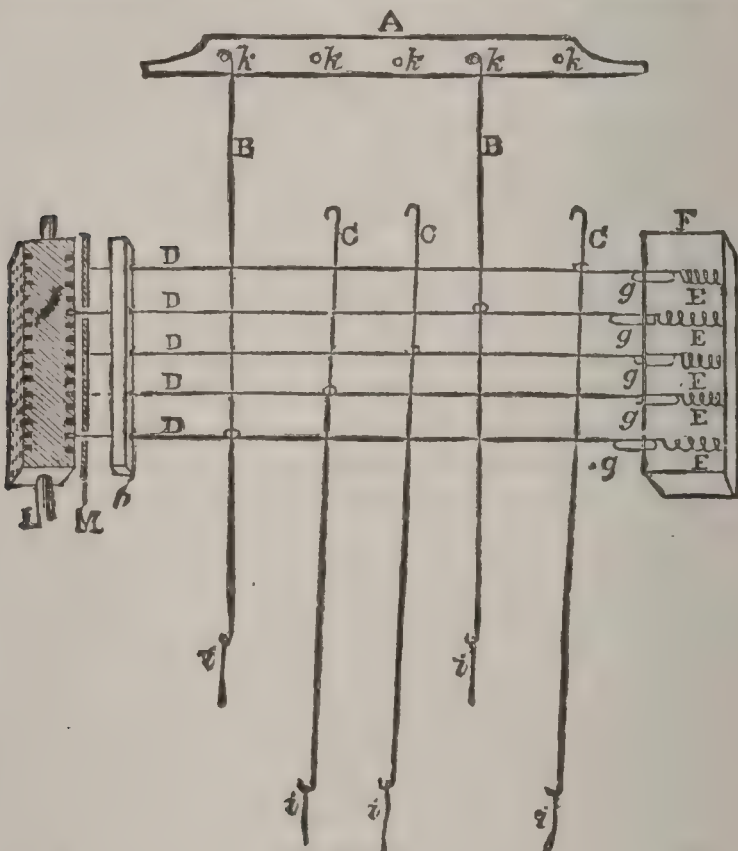


Fig. 1.

i, i, i, i, i) are attached to certain wires in the Jacquard apparatus, which form a rigid continuation ending in a hook, which, when nothing interferes, is caught and raised by each upward motion of the lifting bar; thus, A is the lifting bar, and it has five projections (*k, k, k, k, k*), upon which the hooks of the wires catch when in a straight position, as at B, B, but which miss them if they be thrown out of the perpendicular, as at C, C, C. There are only five of these wires shown, to prevent confusion, but practically there must be one for every thread of the warp—that is, one for every thread in the width of the cloth to be wov-

JACQUARD LOOM.

en. Each of the lifting wires passes through a horizontal needle placed at right angles, D, D, D, D, D, which has a loop formed for the purpose, thus, at *f* (fig. 2). This needle passes freely through an opening in the frame at *h*, and is so looped on to another rod, *g*, on the spring-box F, that it

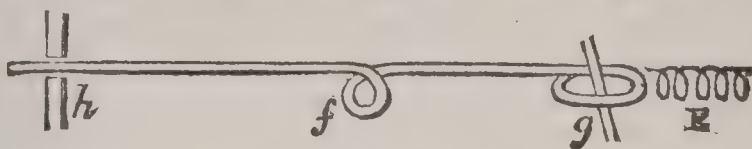


Fig. 2.

moves freely without fear of displacement, and if pushed back into the spring-box, is made to press on one of the spiral springs E, which restores it to its place as soon as it is freed from pressure. In the diagram (fig. 1). this pressure is supposed to be exerted upon three of the lifting wires, C, C, C; consequently, if the lifting bar A is simultaneously raised, those three wires are missed, while the other two, B, B, being in position, catch the projections *k*, *k* on the bar, are drawn up with it, and thus raise the threads of the warp to which they are attached.

Now, the regulation of this pressure upon the horizontal needles is effected by a revolving square roller, which has each of its four sides perforated with rows of holes, which like the needles and lifting wires, correspond in number to the threads of the warp. This, roller when in its place, receives into one row of perforations the whole row of needles where they project through the frame at *h*, and it has a motion given by the machinery which brings each row on its four surfaces in regular order into the same position, and if no impediment is offered, all the needles are undisturbed, and the upright wires lift the entire set of warp-threads to which they are attached. But in order to produce the necessary variations of motion required by the pattern, a set of cards are made, each of the width of the square roller; these also are so perforated that when placed on the surface of the roller their perforations correspond exactly with those on the roller immediately beneath them; but the cards are perforated in exact accordance with the pattern, so that intervals occur in which there are no perforations to correspond with those on the roller; hence, when the roller L (fig. 1) is brought up to the frame *h*, some of the needles will find entrance into the holes of the roller through the corresponding perforations in the covering card, seen in section M, fig. 1; but others will be prevented entering by the absence of such perforations, and the card, by the resistance that it offers, will force the needles thus opposed back upon the springs E, E, E, removing thereby the hooks of the lifting wires from the action of the lifting bar. The cards are looped together at the corners, and move as an endless chain on the rollers, and the entire set of perforations on the whole chain of cards exactly represents the pattern to be produced; the same as the notes represent the air in a piece of music. Of course, the simple operations here described require mechanical ar-

JACQUERIE—JACTITATION.

rangements of great nicety to regulate them; indeed, even with the loom and its apparatus, and its cumbrous arrangement of hundreds, and even thousands of cards in view, the unpracticed eye finds difficulty in comprehending its movements.

A very wonderful simplification of the Jacquard apparatus was shown in the International Exhibition (1862), by Eugenio Vincenzi of Modena, by which a saving of bulk alone is effected to the extent of two-thirds, and the toil of the artisan is lessened greatly by the corresponding lightness of the parts of the machine which he has to move. The most remarkable part of this new invention is the extreme delicacy of the needle action, so that there is no shock when the card offers resistance, hence the inventor has been enabled to substitute paper for thick card-board, and can consequently perforate a dozen with the same ease as one, hence the pattern may be repeated without extra labor. This beautiful little loom will certainly displace the ordinary Jacquard, if it is not itself superseded by the wonderful invention of the electric loom by Bonelli: see ELECTRIC LOOM.

JACQUERIE, n. *jăk'rĭ* or *zhăk'rĭ* [F. *Jacques*, James, familiar name for a countryman or peasant, as our *Jack*, *John*, etc. (see JACK)]: formidable insurrection of the French peasantry so named, against the nobles their oppressors, in the middle of the 14th c., in the reign of John. The insurrection of the J. broke out 1358, when the French king was a prisoner in England, and France in disorder and anarchy. The immediate occasion of it was the enormities perpetrated by Charles the Bad, King of Navarre, and his adherents; but it was really caused by long-continued oppression on the part of the nobles. Suddenly rising against their lords, the peasants laid hundreds of castles in ruins, murdered the nobles, and violated their wives and daughters, practicing every enormity, and acting, as they said, on the principle of doing as had been done to them. The insurrection broke out in the neighborhood of Paris, but extended to the banks of the Marne and the Oise. For some weeks this part of France was entirely at their mercy; but the magnitude of the danger induced the quarrelsome nobles to make common cause against them, and June 9 the peasants were defeated with great slaughter near Meaux by Captal de Buch and Gaston Phébus, Count of Foix; and the insurrection was put down.

JACTITATION, n. *jăk'tĭ-tă'shŭn* [L. *jactĭtārĕ*, to cast or toss to and fro--from *jactārĕ*, to throw or fling]: a tossing about of the body; restlessness; in *med.*, the unconscious movements of a patient in the delirium of a fever. JACTITATION OF MARRIAGE, a suit formerly competent in English ecclesiastical courts, and now competent in the English divorce court, to settle a question of disputed marriage. If a party boast or profess that he or she is married to another, the latter may institute the suit, and call upon the former to produce proof of the marriage. If proof be not produced, then a decree passes which enjoins the party to

JACULATORY—JADE.

perpetual silence on the subject. The Scotch suit of a declarator of putting to silence, is equivalent to jactitation of marriage; a notorious instance of its use was in the Yelverton marriage case.

JACULATORY, a. *jăk'û-lă'tēr-î* [L. *jăcŭlătŭs*, hurled or thrown, as a javelin or dart]: darting or throwing out suddenly; uttered in short sentences; ejaculatory. **JAC'ULA'TION**, n. *-lă'shŭn*, the act of throwing missiles or weapons.

JADE, v. *jăd* [Sp. *jadear*, to play as the flanks, to pant—from *îjada*, the flank]: to tire or fatigue; to become tired; to weary with hard service, attention, or study: N. a tired or worn-out horse; a worthless nag; a mean or sorry woman; a young woman, generally in slight contempt. **JA'DING**. imp. **JA'DED**, pp. and a. fatigued; wearied; harassed, **JADISH**, a. *jă'dîsh*, vicious—applied to a horse; unchaste—applied to a woman. *Note*.—**JADE** is also referred by Mackay to Gael. *iad*, jealousy, *iadach*, or *eudach*, jealous, suspicious; and by Skeat to Dut. *jagan*, to hunt, to drive: OE. *yard*; Scot. *yad*, or *yard*, a jade.—**SYN.** of 'jade, v.': to weary; harass; fatigue; exhaust; crush; sink; dispirit; flag.

JADE, n. *jăd* [F. *jade*—said to be from its Indian name *igida*, or Chinese *yu-tche*, but prob. from the Spanish]: name vaguely applied to a number of minerals, not very dissimilar—nephrite, axestone, serpentine, etc.; but properly restricted to the mineral nephrite (q.v.). So general has been its use that about 150 synonyms of J. have been collected by Prof. Fischer. The name is doubtless due to the Spanish, as the *jade* brought from America by the Spaniards was called *piedra de îjada*, because it was believed to cure pain in the side; for a similar reason it was called *nephritis*, from Greek *nephros*, the kidneys. The Spanish *îjada* means the flank, and is derived from Latin *îlia*, the flanks. J. in its pure state is a native silicate of calcium and magnesium; it is tough, of various shades of green; of yellowish, gray, or white color. Its true home is in Asia, especially China, where it is known as the Yustone—by some supposed to be Prehnite (q.v.)—and where it is found in schistose and gneissose rocks, in nests and veins chiefly in the Khotan: it is procured also from the beds of rivers. From very early times J. was sent as a tribute to the imperial court in China. At Momien, where the manufacture of J. ornaments is largely carried on, a pair of bracelets of the finest J. costs about 100 rupees. A species of J. is found also in Siberia; in some South Sea Islands; and in New Zealand, where it is curiously carved into amulets and axeheads. It occurs in British Columbia; and at the time of the Spanish conquest of America, ornaments of a jade-like mineral were found throughout Mexico, Central America, and Peru. While J. is a foreign material in Switzerland, the fact that implements of J. have been found in that country among relics of pile dwellings has given rise to discussion. Neolithic celts and scrapers have been found at the lakes of Bienne, Zurich,

JADE—JAFFNA.

and Pfäffikon, while the mineral has not been found among the rock formations of Switzerland. The question is whether these objects were obtained by barter, or brought from the far East by the ancestors of the old lake-dwellers. Celts of J. have been found by Dr. Schliemann, in the mound of Hissarlik, and there is one specimen among the Babylonian and Assyrian relics in the British Museum. Boulders of raw nephrite have been found in Brandenburg, in Styria, and in Alaska; J. exists also in further India, though its exact locality has not been determined. The other minerals allied to J. are oceanic J., differing from nephrite J. in the amount of lime and magnesia; 'Jadeite' (China), which is heavier, harder, and of brighter color; Chloromelanite, containing larger proportion of iron; Saussurite, and Fibrolite. See Fischer's *Nephrit und Jadeit* (1880), and Dr. Meyer's catalogue of J. and nephrite articles in the Dresden Museum (1883). See NEPHRITE.

JADE, *yá'dih*, or JAHDE: navigable river and bay in Prussia, w. of the mouth of the Weser. The bay, which opens into the North Sea, was formed 1511 by an inundation of the sea caused by a furious storm, and overflowing a tract of 74 sq. m. A territory also named J. borders on the bay.

JAEN, *chá-án'*: formerly an independent Moorish kingdom, now a province of Spain, forming a portion of the old province or kingdom of Andalusia (q.v.). It lies all within the basin of the Guadalquivir. Area, 5,203 sq. m. Conquered by the Moors on their entrance into Spain, J. maintained its independence as a Moorish state till 1234, when it fell into the hands of Ferdinand III., and was added to the kingdom of Castile. Pop. (1877) 422,972; (1887) 437,842; (1900) 474,490.

JAEN: a city of Spain, cap. of the province of J., is most picturesquely situated in a mountainous district, 1,800 ft. above sea-level, at the foot of a rugged castle-crowned hill, on the Rio de Jaen, tributary of the Guadalquivir, 37 m. n. of Granada. It is surrounded by old Moorish walls, surmounted by numberless towers and pinnacles. Though in the midst of plenty, in a fertile neighborhood, the town is poor. The principal buildings are two cathedrals and several hospitals. Outside the walls are charming well-watered fruit gardens. Pop. about 27,000. In former times the town was called *Jayyenu-l-harir*, 'Jaen of the Silk,' on account of its silk manufactures, for which it was, but is no longer, noted.

JAFFA: see JOPPA.

JAFFNA, *jáf'na*: district of Ceylon, comprising several low dry islands of coral formation in Palk Strait, separated from the n. end of Ceylon and from each other by narrow creeks; length of group 40 m., width 15 m.: principal island and chief town Jaffna, Jaffnapatam, or Yalpaunan. Its elevation is so slight that a large part of it is submerged in rainy seasons, and its soil so dry that nothing of importance will grow without careful irrigation. The chief town, on the w. shore, has a good harbor and a remarkable

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fort built of blocks of white coral; the highland region contains several villages. The leading products are palms, cocoa-nuts, palmyra wood, bananas, areda-nuts, yams, betel, tobacco, inferior cereals, and rice. It is said that J. was occupied by descendants of the Tamil race B. C. 204, and a Tamil rajah was in power when the Portuguese seized the island 1617. The early inhabitants were idolators, but Francis Xavier and his missionaries made many converts there 1544, and a Jesuit college and a Franciscan and Dominican monastery were erected. The Portuguese were driven out by the Dutch 1658, and the Dutch by the English 1795. Pop. of dist. about 220,000; town about 34,700.

JAFFNA, *jáf'na*, or **JAFFNAPATAM**, *jáf'na-pá-tám'*: sea-port in Ceylon on the peninsula of J. at the n. extremity of the island. J. is a neat and pleasant town with stone houses of one story in height, among gardens, shrubbery, and shade trees. The place is of Dutch origin, and a portion of the population is of Dutch descent, and there is still standing a Dutch Presb. church. The Church of England Miss. Soc. began work here 1818, and the American Board of Missions 1822. There is a college, established 1872, also a public library. The inhabitants are mainly Tamils, and are very industrious. Pop. (1871) 34,684; (1891) 43,092.

JAG, n. *jäg* [Gael. *gagaich*; Bret. *gagēi*, to stutter: Bav. *gagkern*, to cluck as a hen: Gael. *gog*, the cackling of a hen, the nodding of the head: such syllables as *gag*, *jag*, *gig*, being often imitative of harsh broken sounds in the first instance, then the sort of figures traced out by the tremulous irregular movements of bodies]: a projection; an indentation; the tooth of a saw; a notch; a ragged protuberance: V. to notch; to cut like the teeth of a saw. **JAG'-GING**, imp. **JAGGED**, pp. *jägd*: **ADJ.** *jäg'gèd*, having notches or teeth; having sharp irregular edges and surfaces. **JAG'GER**, n. *-gër*, one who jags; in *Scot.*, a pedler; the bearer of a wallet or leather bag, called a *jag*; small wheel, mounted in a handle, for crimping and ornamenting edges of pies, cakes, etc., or cutting them into ornamental shapes; a jaggings-iron; a toothed chisel. **JAG'GEDLY**, ad. *-lī*. **JAG'GEDNESS**, n. *-nēs*, the state of having rough projections; unevenness. **JAG'GY**, a. *-gì*, rugged; uneven; set with teeth. *Note.*—**JAG** is also referred to Gael. and Ir. *gag*, a cleft: Gael. *gag*, to split: W. *gag*, a cleft, an aperture—see *Skeat*: comp. Ger. *zacken*, a tooth, a point.

JAGANNĀTHA: see **JAGGERNAUT**.

JAGATAI, n. *jäg-a-tī'* [from *Jagatai*, the native name of Turkistan—from *Jagatai*, a son of Genghis Khan]: the dialect used by the inhabitants of Turkistan.

JAGELLONS, *yá-ghěl'onz*, **THE**: illustrious dynasty which reigned in Lithuania, Poland, Hungary, and Bohemia.—The name is derived from **JAGELLON**, last of a long line of hereditary grand dukes of Lithuania, who succeeded to his patrimonial possession 1381, and was (1386) appointed

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successor to his father-in-law, Lewis the Great, King of Poland and Hungary, in the kingdom of Poland, after having embraced Christianity, and changed his name to WLADISLAS IV. He was engaged during the whole of his reign in repelling the attacks of the Teutonic Knights, whom he finally overthrew by the help of the Hussites of Bohemia. He made an unsuccessful attempt to wrest Hungary from Emperor Sigismund, founded the Univ. of Cracow 1400, and died 1434 at Grodek.—His son, WLADISLAS V., King of Poland (reigned 1434–1444), was elected king of Hungary also on the death of Albert of Austria 1439, mainly through the assistance of John Hunyady (q.v.), vaivode of Transylvania. After a war of two years with Emperor Frederick III., Wladislas turned his sword against the Turks, drove them repeatedly from Moldavia, Wallachia, and Bulgaria, and returned to his capital of Buda loaded with spoils. In 1444 Amurath II. sued for peace, which the warlike Wladislas granted, swearing a solemn oath by the Holy Evangelists; but the pope, having, in defiance of all truth and equity, sent Cardinal Julian to cause a rupture of the treaty, and absolve Wladislas from perjury, that gallant prince summoned to his side John Hunyady, and being joined by Scanderbeg, at the head of an auxiliary force of Epirotes, invaded Turkey, but was totally defeated and slain at Varna (1444, Nov. 10); Cardinal Julian also being left dead on the field.—He was succeeded in Poland by his brother CASIMIR IV. (reigned 1444–92), whose three sons successively reigned—JOHN ALBERT (1492–1501), ALEXANDER (1501–06), and SIGISMUND (1506–48).—SIGISMUND AUGUST (1548–70), son of Sigismund and one of the wisest of the Polish monarchs, added Livonia to his kingdom, and passed an edict of universal toleration.—His sisters, Anne and Catherine, married respectively Stephen Bathori of Transylvania, and John III. of Sweden, and the Jagellon dynasty was continued on the Polish throne till 1668.

WLADISLAS, fourth son of Casimir IV. of Poland, was elected king of Bohemia 1471, on the death of George Podiebrad, and also succeeded Mathias Corvinus in Hungary 1490.—Wladislas died 1516; and was succeeded in both kingdoms by his son, LEWIS II., who was defeated and slain by the Turks at Mohacs, 1526 Aug. 29, and with whom terminated the Jagellons of Bohemia and Hungary.

JÄGER, *n. yä'gèr* [Ger.]: a hunter; a sportsman.

JÄ'GER: see SKUA.

JÄGERNDORF, *yä'gèrn-dörf*: small town of Austrian Silesia, on the Oppa, 14 m. n.n.w. of Troppau. It has manufactures of cloth, hosiery, and linen. Pop. (1880) 11,439.

JAGGERNAUT, or JAGGERNAUT PURI, *jäg-ghèr-nawt' pô-ré'*, or PURI: town in Orissa (85° 54' long., and 19° 45' lat.), celebrated as one of the chief places of pilgrimage in India. It owes its reputation to a temple erected there in honor of Vishnu, and containing an idol of this Hindu god, called *Jaggernaut* (commonly *Juggernaut*), corrup-

JAGGERY—JAGHIRE.

tion of the Sanskrit word *Jagannātha*, i.e., lord of the world. According to a legend related in the Ayeen Akbery, a king desirous of founding a city sent a learned Brahman to pitch upon a proper spot. The Brahman, after a long search, arrived upon the banks of the sea, and there saw a crow diving into the water, and, having washed its body, making obeisance to the sea. Understanding the language of the birds, he learned from the crow that if he remained there a short time, he would comprehend the wonders of this land. The king, apprised of this occurrence, built on the spot where the crow had appeared a large city and a place of worship. The rajah one night heard in a dream a voice saying: 'On a certain day cast thine eyes on the seashore, when there will arise out of the water a piece of wood, 52 inches long, and $1\frac{1}{2}$ cubits broad; this is the true form of the deity; take it up, and keep it hidden in thine house seven days; and in whatever shape it shall then appear, place it in the temple and worship it.' It happened as the rajah had dreamed, and the image called by him Jagannātha became the object of worship of all ranks of people, and performed many miracles. According to another legend, the image arising from the water was an avatāra or incarnation of Vishnu; it was fashioned by Vis'wakarma, architect of the gods, into a fourfold idol. The car festival, when Jagannātha is dragged in his car on a yearly visit to his country quarters, is currently believed to be the occasion of numerous cases of self-immolation, the frantic devotees committing suicide by throwing themselves before the wheels of the heavy car. This is, it would appear, a calumny of English writers. In the *Imperial Gazetteer of India* (1881), Dr. W. W. Hunter writes; 'I carefully examined the whole evidence on the subject from 1580, when Abul Fazl wrote, through a long series of travellers, down to the police reports of 1870. I came to the conclusion which H. H. Wilson had arrived at from quite different sources, that self-immolation was entirely opposed to the worship of Jagannāth, and that the rare deaths at the car festival were almost always accidental. The temple dates from 1198.

JAGGERY, n. *jäg'gër-ĭ*: the Indian name for a kind of coarse dark sugar, obtained by inspissation from the sap (*nera* or *toddy*) of palms. The sap of many species of palms yields J., and probably that of almost all species might be made to yield it. The cocoa-nut yields much of the J. in parts of the East. It is, as generally sold and used in the E. Indies, a coarse kind of sugar; chemically, it is the same with cane-sugar. The sap, which by inspissation yields J., becomes also, by fermentation, palm-wine, and from it by distillation arrack is made. J. is mixed with lime to form a cement.

JAGHIRE, n. *jäg'ēr* [Hind. *jagīr*]: in the *E. Indies*, a government grant of land or of produce to an individual for life, or for the support of a public establishment.

JAG'HIRE-DAR, n. *-dār*, one who holds a *jaghire*.

JAGUAR—JAHN.

JAGUAR, n. *jäg'û-âr* or *jă-gwâr'* [Brazilian, *jagoara*; Sp. *jaguara* or *jaguar*], (*Felis onça*): one of the largest of the cat tribe, and by far the most powerful and dangerous of the American beasts of prey; sometimes called the American Tiger or American Leopard. It is nearly equal to the tiger in size; the head is large, the body thick and the limbs robust; the tail is long, and of equal thickness throughout. The color varies considerably, but is usually a rich yellow, with large black spots and rings, small black spots generally appearing within the rings, a mark by which the skin of the J. may be readily distinguished from that of the other large spotted or ringed *Felidæ*. A black or very dark-brown variety occurs, but the characteristic markings may be seen in certain lights, deeper in color than the rest of the fur. The J. is strong enough to drag away a horse, and swift enough to capture horses on the open pampas. It is, however, an inhabitant chiefly of forests. It abounds so much in some districts, that settlements have been deserted on account of its destruction of domestic animals. It climbs trees, however smooth the stem, and moves about with great agility among the branches, making even monkeys its prey. Instances of its attacking men, though they sometimes occur, are not frequent, but it is bold enough to approach inclosures, and



Jaguar (*Felis onça*).

even to enter villages in broad daylight, in quest of prey. The J. is often taken in traps; and it is sometimes hunted with dogs, when it generally at last takes refuge in a tree, and is there shot. The skins of jaguars are exported from S. America in great numbers. The J. is found in almost all parts of S. America, but its usual range does not now extend n. of the Isthmus of Darien; though it was reported as common in s. Mexico by the first Spanish settlers, and is said to be still seen, though very rarely, as far n. as the boundary of Texas. It is called OUNCE (*Onça*) in parts of S. America.

JAH, n. *jáh*: a contr. for Jehovah.

JAHN, *yân*, FRIEDRICH LUDWIG: 1778–1852: eccentric German, the first to make gymnastics a national pastime in Prussia, especially for soldiers. His gymnastic schools be-

JAHN—JAIL FEVER

came centres of patriotic enthusiasm, but his fantastic theories alarmed the government, and he was treated as a dangerous demagogue. He died at Freiburg.

JAHN, JOHANN: 1750, June 18—1816, Aug. 16; b. Tassawitz, Moravia: distinguished Rom. Cath. orientalist and biblical critic. He received his early education at Znaim and Olmütz, and 1772 entered the Premonstratensian convent of Bruck, where he took his vows 1774, and was appointed prof. of oriental languages and biblical criticism. On the suppression of this convent 1784, J. was transferred to the same professorship in Olmütz, and finally to the Univ. of Vienna, where he took also the chair of dogmatic theology. As regards the Rom. Cath. literature of Germany, J. may be regarded as the father of biblical criticism. But the boldness of some of his opinions having aroused the alarm of the ecclesiastical authorities, he was honorably removed from his chair in the univ., by being promoted to a canonry of St. Stephen's at Vienna, 1803. He continued, however, to pursue the same studies with great reputation till his death 1816, and published many works in both departments, the most important of which, besides his grammars, lexicons, and elementary books of the Hebrew, Syriac, Chaldaic, and Arabic languages, are *Introduction to the Old Testament*, 2 vols. 1792, and again in 4 vols. 1802–3; *Biblical Archæology*, 5 vols. 1797–1805, of both which works a compendium appeared 1804, and again in 1814; *Manual of General Hermeneutics*, 1812; an Appendix of Dissertations to this work, 2 vols., 1813–15; and an ed. of the Hebrew Bible, 4 vols. 1806. Five years after his death, a collection of *Remains* was published at Tübingen, 1821, the genuineness of which has been questioned, though seemingly without reason. His works have gone through many editions in Germany, and have been translated into several languages.

JAHOVIST, or JAHOIST: see ELOHIST: JEHOVAH.

JAIL, n. *jāl* [written also GAOL, which see]: prison; place of confinement for prisoners. JAIL'OR, n., or JAILER, n. -*er*, the keeper of a jail. JAIL-BIRD, one who has frequently been in a jail.

JAIL FE'VER (known also as PUTRID or PESTILENTIAL FEVER): now considered to be merely a severe form of Typhus Fever (q.v.), and not a distinct disease. Owing to improved sanitary regulations, this form of disease is now almost unknown; but we learn from Howard's *Account of the State of Prisons*, that, in his time, the disease was very frequent in the prisons of England, though unknown in those of the continental countries. In the celebrated Black Assize (q.v.), at Oxford 1577, there is no evidence that the disease prevailed among the prisoners, and yet it broke out among the persons present at the trial. So recently as 1750, May, the lord mayor, an alderman, two judges, most of the jury, and a large number of the spectators, caught this disease from attending the assizes at the Old Bailey; and many of those who were infected died.

JAIN ARCHITECTURE—JAINAS.

JAIN ARCHITECTURE: architecture of the Jains. Their chief seats in India being Guzerat and Mysore, the chief temples and ruins are in those provinces; the oldest are believed to be about Junaghar in Guzerat. There are fine ones in Mount Abu, a granitic mountain 5,000 or 6,000 ft. high in the same province. One temple there is of date between 1197 and 1247, another about 1032.

JAINAS, *jī'naz*, or **JAINS**, *jīnz*: largest heterodox sect of the Brahmanical Hindus, numerous adherents of which are found in every province of Upper Hindustan, in the cities along the Ganges, and in Calcutta, but especially to the westward; the provinces of Mewar and Marwar being apparently the cradle of the sect. They are numerous also in Guzerat, in the upper part of the Malabar coast, and are scattered throughout the s. peninsula. They have wealth and influence, and form a large and important division of the population of India. The name of the sect means a follower of *Jina*, the latter being one of the denominations of their deified saints; and as another name of these saints is *Arhat*, their followers are called also *Arhatas*.

The tenets of the J. or Arhatas are in several respects analogous to those of the Buddhists (see **BUDDHISM**), but they resemble in others those of the Brahmanical Hindus. With the Buddhists, they share in the denial of the divine origin and authority of the Veda, and in the worship of certain saints, whom they consider superior to the other beings of their pantheon. They differ, indeed, from them in regard to the history of these personages, but the original notion which prevails in this worship is the same. With the Brahmanical Hindus, on the other hand, they agree in admitting the institution of caste, in performing the essential ceremonies called *Sanskāras* (q.v.), and in recognizing some of the subordinate deities of the Hindu pantheon, at least apparently, as they do not pay especial homage to them, and as they disregard completely all those Brahmanical rites which involve the destruction of animal life. It deserves notice, too, that though rejecting in general the authority of the Vedas, they admit it, and quote the Vedic texts, if the doctrines of the latter are conformable to the Jaina tenets.

According to their doctrine, all objects, material or abstract, are arranged under nine categories, called *Tattwas*, truths or principles, of which we need notice only the ninth and last, called *Moksha*, or liberation of the vital spirit from the bonds of action—i.e., final emancipation. In reference to it, the J. not only affirm that there is such a state, but they define the size of the emancipated souls, the place where they live, their tangible qualities, the duration of their existence, the distance at which they are from one another, their parts, natures, and numbers. Final emancipation is only obtained 'in the state of manhood (not in that of a good demon or brute), while in possession of five senses, while possessing a body capable of voluntary motion, in a condition of possibility, while possessing a mind, through the sacrament of the highest asceticism, in that path of rectitude, in which there is no retrogression, through the pos-

session of perfect knowledge and vision, and in the practice of abstinence.' Those who attain to final liberation do not return to a worldly state, and there is no interruption to their bliss. They have perfect vision and knowledge, and do not depend on works. See J. Stevenson, *The Kalpa Sūtra, and Nava Tattwa*.

The principles of faith, as mentioned before, are common to all classes of J., but some differences occur in the practice of their duties, as they are divided into religious and lay orders. *Yatis* and *S'rāvakas*. Both, of course, must place implicit belief in the doctrines of their saints; but the *Yati* has to lead a life of abstinence, taciturnity, and continence; he should wear a thin cloth over his mouth, to prevent insects from flying into it, and he should carry a brush to sweep the place on which he is about to sit, to remove any living creature out of the way of danger; but, in turn, he may dispense with all acts of worship; while the *S'rāvaka* has to add to the observance of the religious and moral duties, the practical worship of the saints, and a profound reverence for his more pious brethren. The secular Jaina must, like the ascetic, practice the four virtues—liberality, gentleness, piety, and penance; he must govern his mind, tongue, and acts; abstain, at certain seasons, from salt, flowers, green fruits, roots, honey, grapes, tobacco; drink water thrice strained, and never leave a liquid uncovered, lest an insect should be drowned in it; it is his duty also to visit daily a temple where some of the images of the Jaina saints are placed, walk round it three times, make an obeisance to the image, and make some offerings of fruits or flowers, while pronouncing some such formula as 'Salutation to the Saints, to the Pure Existences, to the Sages, to the Teachers, to all the Devout in the world.' The reader in a Jaina temple is a *Yati*, but the ministering priest is not seldom a Brahman, since the J. have no priests of their own, and the presence of such Brahmanical ministrants seems to have introduced several innovations in their worship. In Upper India, the ritual in use is often intermixed with formulas belonging more properly to the S'aiva and S'ākta worship (see Hindu sects under INDIA), and images of S'iva and his consort take their place in Jaina temples. In the south of India, they appear, as mentioned before, to observe also all the essential rites or Sanskâras of the Brahmanical Hindu. The festivals of the J. are especially those relating to events in the life of their deified saints; but they observe also several common to other Hindus, as the spring festival, the S'rîpanchamî, and others.

The J. are divided into two principal divisions, *Digambaras* and *S'wetâmbaras*. The former word means 'sky-clad,' or naked, but in the present day, ascetics of this division wear colored garments, and confine the disuse of clothes to the period of their meals. *S'wetâmbara* means 'one who wears white garments;' but the points of difference between these two divisions are far from being restricted to that of dress: it is said to comprehend a list of 700 topics, of which 84 are considered to be of paramount importance. Among the latter are mentioned the practice of the S'wetâm-

baras to decorate the images of their saints with earrings, necklaces, armlets, and tiaras of gold and jewels; whereas the Digambaras leave their images without ornaments. Again, the S'wetâmbaras assert that there are twelve heavens and sixty-four Indras; whereas the Digambaras maintain that there are sixteen heavens and one hundred Indras. In the south of India, the J. are divided into two castes; in Upper Hindustan, they are all of one caste. It is remarkable, however, that among themselves they recognize a number of families between which no intermarriage can take place, and that they resemble, in this respect also, the ancient Brahmanical Hindus, who established similar restrictions in their religious codes.

As regards the pantheon of the Jaina creed, it is still more fantastical than that of the Brahmanical sects, whence it is borrowed to a great extent, but without any of the poetical and philosophical interest which inheres in the gods of the Vedic time. The highest rank among their numberless hosts of divine beings—divided by them into four classes, with various subdivisions—they assign to the deified saints, which they call *Jina*, or *Arhat*, or *Tirthakara*, besides a variety of other generic names. The J. enumerate twenty-four Tirthakaras of their past age, twenty-four of the present, and twenty-four of the age to come; and they invest these holy personages with thirty-six superhuman attributes of the most extravagant character. Notwithstanding the sameness of these attributes, they distinguish the twenty-four Jinas of the present age from each other in color, stature, and longevity. Two of them are red, two white, two blue, two black; the rest are of a golden hue, or a yellowish brown. The other two peculiarities are regulated by them with equal precision, and according to a system of decrement, from *Rishabha*, the first Jina, who was 500 poles in stature, and lived 8,400,000 great years, down to *Mahāvîra*, the 24th. who had degenerated to the size of a man, and was no more than 40 years on earth; the age of his predecessor, *Pîrs'vanâtha*, not exceeding one hundred years. The present worship is almost restricted to the two last Tirthakaras; and as the stature and years of these personages have a reasonable possibility, H. T. Colebroke inferred that they alone are to be considered as historical personages. As, moreover, among the disciples of Mahāvîra there is one, Indrabhûti, who is called *Gautama*, and as Gautama is also a name of the founder of the Buddha faith, the same distinguished scholar concluded that, if the identity between these names could be assumed, it would lead to the further surmise that both these sects are branches of the same stock. But against this view, which would assign to the Jaina religion an antiquity even higher than 543 before Christ—the date which is commonly ascribed to the apotheosis of Gautama Buddha—several reasons are alleged by Professor Wilson. As to the real date, however, of the origin of the Jaina faith, as the same scholar justly observes, it is immersed in the same obscurity which invests all remote history amongst the Hindus. We can only infer from the existing Jaina literature, and from

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the doctrines it inculcates, that it came later into existence than the Buddhist sect.—The best essays on the tenets, mythology, observances and literature of this sect are those by Colebroke in his *Miscellaneous Essays*, and by Wilson in the first volume of his works (London, 1862).

JAIPUR': see JEYPORE.

JAKES, n. *jāks* [Ger. *gar:che*, a filthy liquid: AS. *cac-hus*, a privy]: in OE., a privy; a necessary house.

JAKUTSK, *yâ-kôtsk'* (*Yakootsk*): chief town of the govt. of J. in E. Siberia (see SIBERIA). It is on the left bank of the river Lena, lat 62° 1' n., long. 129° 44' e.; 5,751 m. from St. Petersburg; pop. (1867) 4,982; (1887) 6,499. The whole industry of the town consists in candle-works, but it is, notwithstanding, the principal market of E. Siberia for traffic with the native hunting tribes of the Jakuts and Buriats. The former, mostly nomadic tribes, possessing large herds of cattle and horses, bring butter to the market, which is dispatched on horseback to the port of Okhotsk. The latter, also a nomadic tribe, bring to Yakutsk great quantities of fur-skins, of sables, foxes, martens, squirrels, bears, hares, etc. The busiest periods of the year are the months of May and June; in May, the goods are dispatched to the seaports; in June there is an important fair, during which the quantity of merchandise sold, chiefly furs and mammoth tusks, amounts to abt. \$250,000 in value. Manufactured goods, hardware, etc., are brought from Irkutsk by the Lena.—The govt. of Yakutsk has 1,533,397 sq. m.; pop. (1897) 261,731.

JAL'ANDHAR: see JULLUNDUR.

JALAP, n. *jāl'āp* [*Xalapa*, in Mexico, where it grows: F. *jalap*]: root of a plant reduced to powder—used in medicine as a purgative; the *Exogonium purga*; also from a plant called *Ipomœa purga*, ord. *Convolvulacæ*. JALAPIN, n. *jāl'ā-pîn*, a purgative resin contained in certain *Convolvulacæ*, one of the active principles of jalap.—The plant from whose tuberous roots *Jalap* is prepared, is found in Mexico, about 6,000 ft. above the sea-level, in the neighborhood of the town of Jalapa or Xalapa. It is a perennial twining plant, with large flowers and a turnip-like root, varying from the size of a hazel-nut to that of a man's fist. The roots when fresh are white and fleshy, and abound in a milky juice. They are prepared for the market by drying.—J. was long erroneously referred to other plants, among others to *Mirabilis Jalapa*, known in flower-gardens as *Murvel of Peru*. The root known as *Male Jalap* or *He Jalap*, with which the true J. of commerce is often adulterated, was recently declared by Hartweg to be *Ipomœa batatoides*. Its properties are somewhat similar to those of true J., but it is very inferior. J. seems to have been introduced into Britain as a medicine about 1609.

The dried roots are brown and wrinkled externally, and of deep yellowish gray internally; their odor is faint and disagreeable, and their taste nauseous. The active ingredient is the resinous portion, which varies from about 10 to nearly 20 per cent., and which is composed of two dis-

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tinct substances, *Jalapin* or *Jalapine* ($C_{31}H_{50}O_{16}$), and *Jalapic acid*. J. resin may be distinguished from common resin by its insolubility in volatile oils. J. is a valuable cathartic, but is seldom given alone. Its purgative action is increased by the addition of a little calomel, and its hydragogue action by bitartrate of potash, while its tendency to produce griping is obviated by addition of a little ginger. It is extremely useful in those febrile affections of children which are associated with constipation; and in diseases of the brain it is a good purgative to select, on account of its derivative action. In the form of *Compound Jalap Powder*, which consists of one part of powdered J., two parts of bitartrate of potash, and a little ginger, it is of great service in some kinds of dropsy, by its hydragogue action.



Jalap (*Exogonium Purga*):
a, the root.

The ordinary dose of powdered J. for an adult varies from 10 to 30 grains, a scruple generally acting smartly and safely; for children under a year old the dose is two to five grains. The dose of the compound powder is double that of the ordinary powder. The *Tincture of Jalap*, in the dose of one or two drams, is a useful addition to the ordinary black-draught when it is desired to increase its activity.

JALAPA, or XALAPA, *châ-lâ'pâ*: city in the Mexican confederation, second in importance among the towns of the state of Vera Cruz. It is on the grand route between the cap. of the country and the seaport of Vera Cruz, and about 60 m. w.n.w. of the latter. Its elevation of 4,335 ft. above sea-level gives it the climate of the temperate

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region, and it is a favorite resort of the invalids of the coast. Pop. (1888) 14,000; (1892) 18,000.

JALISCO, *chá-lēs'kō*: state of Mexico, bounded on the n. by Sinaloa, Durango, Zacatecas, and Aguas Calientes, e. by Guanajuato and Michoacan, s. by Colima, s.w. by the Pacific Ocean; 50,000 sq. m.; cap. Guadalajara. It is divided into 9 cantons; watered by the Tololotlan or Santiago, Verde, Lagos, Ameca, Ayuguila, San Pedro, Tepic, Acaponeta, Jerez, and Cañas rivers; contains the lakes of Chapala (90 m. long, 10–35 m. wide), Sayula, Magdalena, and Mescaltitan, and the Tapalpa, Tigre, Nevado, and the Volcan de Colima (12,000 ft. above sea-level) mountains of the Sierra Madre range; has many beautiful valleys adapted to the cultivation of tropical products; and abounds in gold, silver, iron, copper, and mercury. Beside the cap. the chief towns are Lagos, Zapotlan el Grande, and Tepic. J. was formerly the kingdom of Nueva Galicia, and governed as a province distinct from New Spain or Mexico. It was explored by Cortez and Alvarado, and settled by NuñodeGuzman. Pop. (1889) 1,161,709; (1900) 1,137,311.

JALOUSIE, n. *zhāl'û-zē*, or *jāl'û-zē*, **JALOUSIES'**, n. plu. *-zēz'* [F. *jalousie*, jealousy, a venetian-blind]: in the *E.* and *W. Indies* and in *France*, a name for venetian-blinds forming inside blinds.

JAM, n. *jām* [mod. Gr. *zoumī*, broth, juice: but may only be another sense of **JAM** 2, from the sense 'pressed or squeezed']: a conserve of fruit boiled with sugar: see **JAMS** AND **JELLIES**.

JAM, v. *jām* [Eng. *jamb*, the side-post of a door]: to press in between something that confines the space on each side, like the *jamb*s of a door: to squeeze tight; to press or wedge in. **JAMMING**, imp. **JAMMED**, pp. *jāmd*. *Note*.—**JAM** may only be another spelling of *cham* or *champ*, to tramp heavily, to bite or chew: comp. also Ger. *zwang*, pressure; *zwängen*, to squeeze.

JAMAICA.

JAMAICA, a. *ja-mā'ka*: of or from *Jamaica*, as 'Jamaica pepper,' one of the names given to allspice. JAMAICA BARK, see CARIBBEE BARK. JAMAICA PEPPER, see PIMENTO.

JAMAICA, *ja-mā'ka* (aboriginally *Xaymaca*, or *Land of Wood and Water*): one of W. India Islands, and by far the most important of those which belong to Great Britain; about 90 m. s. of Cuba, in n. lat. $17^{\circ} 40'$ — $18^{\circ} 30'$, and w. long. $76^{\circ} 15'$ — $78^{\circ} 25'$; 4,200 m.; greatest length, 135 (or 144 m.); greatest breadth, 50 m. It is traversed from e. to w. by a heavily-timbered ridge, called the Blue Mountains, which rises to about 7,000 ft. From this range, at least 70 streams descend to the n. and s. shores, but owing to the shortness and declivity of their courses they are not navigable, with the exception of one, the Black river, which affords for small craft a passage 30 m. into the interior. Excellent harbors are numerous; but incomparably the best is formed by a deep and capacious basin in the s.e. quarter of the island, which washes the most spacious and fertile of the plains between the hill-country and the coast. Around this inlet, and within a few m. of each other, are all the considerable centres of population, Port Royal, Kingston, and Spanish Town.

The climate varies considerably—the torrid belt of the coast gradually passing into the temperate region of the central heights. The latter is said to be remarkably favorable to longevity; and, after having long been a retreat for the residents themselves, it has lately begun to attract invalids from the United States. To contrast two positions—the one near Kingston Harbor, and the other at the intermediate elevation of 4,000 ft.—their annual means are stated to be respectively 81° F. and 68° F. Earthquakes have occasionally occurred, one of them, 1692, having almost overwhelmed Port Royal. The emancipation of the slaves 1834 had an unfavorable effect on the productiveness and trade of the island. But, even previous to the new order of things, the commercial crops had been steadily decreasing. To take by itself the grand staple of sugar, the last 3 years of the slave trade, 1805–07, had averaged fully 144,000 hogsheads; the 4 years before the commencement of the abolition of slavery, 1831–34, under 91,000; the 4 years of gradual abolition, 1835–38, nearly 70,000; the first 4 years of complete freedom, 1839–42, less than 42,000. The revenue of the govt. for the year ending 1899, Mar. 31, was \$3,759,735; expenditure \$3,499,000. The public debt at this time was \$9,125,252. Large outlays were made for public works. A large part of the revenue was derived from customs. The imports, 1899, amounted to \$8,963,454; exports, \$9,078,869. Leading imports were cotton goods, fish, flour, rice; the principal exports being fruit, coffee, raw sugar and rum. The banana trade has greatly increased, the exports to the United States alone amounting to more than 2,500,000 bunches annually. The exports of all fruits, coffee, tobacco, timber, and cinchona are increasing and the live stock industry is becoming important. The total number of acres under cultivation was (1902) 739,256, of which

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202,168 were under tillage and 413,152 under pasture; under sugar-cane, 27,342 acres; coffee, 31,265; bananas, 32,842; cocoanuts, 13,244; corn, 194; cacao, 3,548; ground-provisions, 91,733; Guinea grass, 125,936; common pasture, 329,603; pasture and pimento, 79,379. J. has (1902) about 185 m. of railway in operation.

J. was discovered by Columbus during his second voyage 1494, and was taken possession of by the Spaniards 1509. So great was the inhumanity of the conquerors, that 50 years after the Spanish invasion of the island the native population is said to have entirely disappeared. 1665, May 3, British expedition, sent out by Oliver Cromwell, under Admirals Penn and Venables, assailed and captured the island, which was formally ceded to England by the treaty of Madrid 1670. Under English rule, the chief events in the history of the island were: 1795, the rebellion of the Maroons, a community of runaway slaves, who had obtained a tract of land on the n. side of the island; 1831, a negro insurrection; and 1834, Aug. 1, the emancipation of the slaves. The last event was followed by ill-judged concessions of representative and constitutional rights to the newly liberated blacks. The experiment proved a failure. The blacks considered it a grievance that offices in the magistracy were not more frequently conferred on them. They wished to suppress coolie immigration, which tended to keep down wages. They sought to obtain land without rent, and the more violent even suggested the expulsion of the whole white population of the island.

In 1865, the discontent was at its height. In October of that year, a decision of the local court at Morant Bay against a black squatter, led to a negro rising, and the massacre of 23 whites. Martial law was proclaimed by Gov. Eyre, 1,000 houses were burned, some rebels were hanged, others were flogged; but the rebellion was effectually suppressed. For the course that he had taken, Gov. Eyre was thanked by the Jamaica Assembly; but in England a different view was taken of his conduct (see EYRE). He was recalled, and the representative constitution was suspended. Sir P. J. Grant was appointed gov., with entire authority to manage the affairs of J., with the aid of advisers nominated as in the other W. India Islands. It now appears that from the catastrophe of 1865, so nearly fatal to the island, a new life has sprung. Crime has diminished; education has everywhere advanced among the black population, the number of govt. schools in the island in 1901-2 being 728, with 84,799 children enrolled. A collection of Jamaica products was exhibited with very satisfactory results at the Philadelphia Exhibition of 1876, and 31 awards were obtained by the island. New roads have been formed, harbors are being constructed, and an irrigation canal is in progress which will give fertility to 50,000 acres of the beautiful plain between Spanish Town and Kingston. The Cuban refugees have taken several of the long forsaken sugar estates, thus increasing the value of property, and the official statements show that the export trade is increasing. Although J. has not recovered

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all its former commercial prosperity, the negroes cannot now be described as idle. They cultivate their provision grounds with care, and produce for sale enough sugar and coffee to obtain a considerable supply of imported and manufactured articles. Extreme poverty is unknown, and under their present government they are described as law-abiding and inoffensive. Well-informed and experienced visitors to the island have strongly recommended energetic young Englishmen of the wealthier class, who contemplate emigration, to take their capital to the highlands of J. In 1880 a cyclone did damage to the extent of more than \$5,000,000. The cap. of J. is Kingston; pop. (1891) 46,542.

The ecclesiastical establishment has been abolished. The number of churches and chapels 1902 was: 219 Church of England; 128 Wesleyan; 43 other Methodists; 27 Moravians; 189 Baptists; 73 Pres.; 10 Church of Scotland; 20 Christian; 26 Congl.; 28 Rom. Cath.; also 2 Synagogues. There are also some Rom. Cath. priests and churches. The public and industrial schools are in a flourishing condition. A govt. scholarship of an annual value of £200 tenable for three years was established (1885) for annual competition by boys born in J. In 1879 the govt. bought the road of the J. railroad company, extending from Kingston to Old Harbor (23 m.), and opened an extension to Parus 1885, Mar., and completed the line to Ewarton the same year. There were (1902) 683 miles of telegraph and 154 of telephone lines.

Total pop. (1861) 378,433, of which 13,816 were white, the remainder half breed or black; (1871) 506,154, of which 13,101 white; (1881) 580,804; (1901) 770,242.

JAMAICA: tp., town, and cap. of Queens co., N. Y.; on Jamaica Bay, s. side of Long Island, and on the South Side and Long Island railroads; 10 m. e. of Brooklyn. It contains many handsome residences, town-hall, public library, public and private schools, 2 academies, 6 churches, one state bank, one savings bank, and manufactories of carriage and various small wares, is lighted with gas and electricity, and has as residents many persons doing business in New York and Brooklyn. The tp. contains several other towns and villages, and has extensive farming and market-gardening interests. Pop. tp. 10,088; (1890) 14,441. It became a part of the city of New York (1898).

JAMAICA PLAIN: part of the 23^d ward of Boston, Suffolk, co., Mass.; formerly village in the town of W. Roxbury, Norfolk co.; on the Boston and Providence railroad, 3 m. from the centre of Boston. It contains the agricultural and horticultural school (Bussey Institution) of Harvard Univ., several churches, public library, rubber-mills, and carriage factories, and was incorporated with Boston 1874, Jan. 1. The beautiful shores of Jamaica Pond, on which it borders, are lined with the costly residences of many business men of Boston.

JAMB, n. *jăm* [F. *jambe*, a leg—from It. *gamba*—from mid. L. *gamba*, a thigh, a leg]: the side supports of any opening in a wall, as a fireplace. door, window, etc.; a door-

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post; a miner's term for any thick mass of rock which prevents them pursuing the lode or vein.

JAMBOS: see EUGENIA.

JAMES [Gr. *Jacobos*, and really the same word as Jacob]: name borne by several persons in the New Testament. (1.) JAMES, apostle, son of Zebedee and brother of John; (2.) JAMES, apostle, son of Alphaeus—considered by many the same as James the Just: (3.) JAMES the Just, brother of the Lord Jesus (see these three below).

Others of the name are as follows: (4.) JAMES 'the Little'—usually improperly called 'the Less'—'brother of Joses' (Mk. xv. 40, and xvi. 1); 'son of Mary' (Matt. xxviii. 56; Mk. xv. 40; xvi. 1; Lk. xxiv. 10): he is by many identified with James the Just; (5.) JAMES, either father or brother of the apostle 'Judas not Iscariot' (Lk. vi. 16; Acts i. 3).—It must be noted that the New Test. record is indefinite concerning the various persons of this name, and renders possible more than one scheme of identification and discrimination: see below.

JAMES: one of the 12 apostles of the Lord Jesus: son of Zebedee and brother of John. He was among the earliest of Christ's disciples. Among those whom the Lord named 'apostles,' with reference to their future work, J., with Peter and John, was distinguished by special intimacy with the Master, being taken by him to witness the raising of Jairus' daughter, the transfiguration, and the conflict in Gethsemane. He and his brother were named by the Lord 'Sons of thunder,' perhaps in view of their impetuous dispositions as manifested by the question, 'Wilt thou that we command fire to come down from heaven and consume them?' Impelled by ambition they sought, through their mother, the two chief places in what they then supposed was to be his earthly kingdom. After the resurrection, J. was one of seven disciples to whom the Lord appeared at the Sea of Galilee.

At the beginning of the Acts J. is mentioned as one of the assembled apostles. Yet none of his words or deeds are recorded; nor is there anything to indicate that he was prominent among the disciples until, in chap. xii., it is said that when Herod rose up against them he first put J. to death. As this was the first of the apostles to suffer martyrdom, so he is the only one of them the manner of whose death is historically certain. All that is commonly believed concerning the others rests on tradition—some of it trustworthy, but much of it uncertain and vague.

JAMES: one of the 12 apostles of the Lord Jesus: son of Alphaeus: probably not, as some have thought, the J. surnamed 'the little' or 'the less,' with reference to his stature. Some, with little reason, suppose that he was the leader in the church at Jerusalem who, after the death of James, son of Zebedee, is spoken of in the Acts and by Paul. Setting this hypothesis aside, nothing is recorded concerning his work as an apostle. But the same thing is true concerning others of the 12, and is no evidence that any of them were unfaithful or inefficient.

JAMES.

JAMES (THE JUST): first bishop or pastor of the church in Jerusalem: brother of the Lord Jesus. When Peter was delivered from prison by the angel he was directed to go at once 'to *James* and to the brethren.' This implies that, besides the apostle James whom Herod had just killed, there remained another J. who even then was prominent among the Christians. Eight years later, when Paul and Barnabas went to Jerusalem to consult with the church on matters of vital importance, after all parties had spoken, J. made an address declaring his judgment. This judgment was unanimously adopted by the church. In the record he is not called the presiding officer, but his address is consistent with the supposition that he was. Paul afterward wrote of J., Peter, and John as the three who at that time were regarded as pillars in the church. Eight years later still, when Paul again visited Jerusalem, he went in at once to J., with whom all the elders or pastors were assembled. Here it is manifest that, by whatever name he may have been called, he was in fact the presiding officer of the church. This being so two other things concerning him clearly appear.

1. Exalted as he was in influence, he is never called an apostle. In the Acts no title whatever is given him. He is spoken of simply by his name J.; and no reason for his prominence in the church is assigned. Paul seems to assert (Gal. i. 19), that he was not an apostle; affirming that, during his (Paul's) first visit to Jerusalem after his conversion, he tarried 15 days with Peter 'but other of the apostles saw I none, save [or, but only] James, the Lord's brother.'

2. Though never called an apostle, another name is given him which, in connection with his personal excellence, goes far to explain his prominence in the church. Paul calls him 'the Lord's brother.' The New Testament declares repeatedly that the Lord Jesus had brethren according to the flesh. The people of Nazareth knew them and called them by name, 'James and Joses, Simon, and Judas.' The evangelists Matthew, Mark, and Luke testify to their well-known existence, and the apostle John declares also that at first they did not believe in the messiahship of Jesus; but in the Acts they are seen taking their place at once with Mary among the disciples, and Paul ranks them with Peter and others who were prominent in the infant church. These facts show that we are not warranted by the New Testament in striving to explain away Paul's single epithet, 'James, the Lord's brother.'

The New Testament tells nothing concerning the death of J., but Josephus says that he was sentenced by the Sanhedrin to be stoned.

JAMES, THE EPISTLE OF: one of the canonical books of the New Testament. Its genuineness is evidenced by its having a place in the Syriac version of the New Testament made about the beginning of the 2d c., and near Jerusalem where James was well known. Clement of Rome, about the same time, probably alludes to it. Origen, 3d c., and Athanasius, 4th c., regarded it as genuine. Eusebius says it was rejected by some; yet he quotes it and calls it Scrip-

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ture. At length it was almost universally accepted by the ancient churches east and west.

At the Reformation Luther called it 'a strawy epistle,' because as he thought it contradicted Paul's doctrine of justification by faith. But after maturer study he admitted its genuineness, convinced that the contradiction was only apparent. Since Luther's time this supposed contradiction between James and Paul has often been re-asserted. But when both writers are understood they are found to agree. Paul first speaks of Abraham at the beginning of his renewed life; James, only after that life had been far advanced: Paul defines justification as the act of God; James regards it as needing to be made visible to men: Paul affirms that works not wrought in faith are insufficient; James insists that a faith which does not produce works is no faith—faith only in name.

In the epistle many things are best understood and most significant when its author is regarded as a man of just the character ascribed to James and surrounded by just his conditions. In becoming a Christian he continued to be a Hebrew, living chiefly, if not entirely, at Jerusalem. So in his epistle he addresses the 12 tribes of the dispersion, yet draws his instructions and exhortations from the condition of those by whom he was surrounded at home. Though attached to Christ and his church he was also zealous for the Law; naturally, therefore, in his epistle, as his highest estimate of the faith of Christ he calls it 'the perfect law of liberty.' He asks, 'Do not the rich oppress you, drag you to the judgment seat, and blaspheme the excellent name by which you are called?' So in Jerusalem he was surrounded with rich Sadducees who were oppressors, persecutors, and blasphemers of the Lord. As a true Jew, the writer of the epistle often quotes or alludes to the principal books of the Old Testament, from Genesis to Malachi; and from the same source draws his examples—Job, Abraham, Rahab, Elijah, and the prophets. He inculcates, as tests of true religion, righteousness and cheerful activity in performing the duties of life. His style, as seen through the translation, while natural, flowing, and earnest, is adorned with poetic imagery of great variety; and in the original his Greek is commended by critics as elegant and pure.

JAMES I., King of Scotland: 1394–1437, Feb. 20 or 21 (king 1406–37); b. Dunfermline; third son of Robert III., by Annabella Drummond, daughter of Sir John Drummond of Stobhall. His elder brother, David, Duke of Rothesay, having been murdered by his uncle, the Duke of Albany, J. became heir to the throne. Fearing that he also might be sacrificed to the unscrupulous ambition of Albany, his father resolved to send him to France 1405, but the vessel in which he embarked was taken by the English, and J. was carried to London and sent to the Tower. In 1407, he was removed to Nottingham Castle, where though forcibly detained, he was in all respects treated as a member of the household, by the governor, Sir John Pelham. In 1417 he accompanied Henry V. in his expedition to France. On the death

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of Robert III., 1406, James became nominal sovereign, but in his captivity the government practically devolved on the Duke of Albany. On his death, 1419, his son Murdoch succeeded to the regency. In 1424, J.'s long captivity came to an end: on giving hostages for payment of £40,000, he was allowed to return to his kingdom. Previous to leaving England, he married Lady Johanna Beaufort, daughter of the Earl of Somerset, fourth son of John of Gaunt. To the excellent education which he received in England, J. was much indebted. His poems, *Christ's Kirk on the Green* (the authorship of which, however, is disputed), and *King's Quhair*, show natural poetic talent. With his reign the indefinite rule of the king and arbitrary authority of the nobles ended in Scotland, and constitutional monarchy on definite principles and with recognition of popular rights, began. With the acts of his first parliament, 1424, the regular series of Scotch statutes may be said to begin. Many excellent laws were passed for regulation of trade, and for the internal economy of the kingdom; and these were administered with a vigor which Scotland had never known before. No sooner was J. firmly seated on the throne, than he resolved to execute vengeance on the Albany family. By a parliament at Perth 1425, the two sons of the late Regent Murdoch and his father-in-law, the Earl of Lennox, were found guilty of certain crimes, and immediately beheaded. The next few years of J.'s reign are among the most peaceful in the history of Scotland previous to the union of the crowns; the efforts of the king being directed to the repression of internal disorders, especially in the Highlands, where scarcely any law except that of the strongest had been known. In 1436, J.'s eldest daughter, Margaret, was married to the Dauphin of France, afterwards Louis XI. Among those whom the wisely severe policy of the king had offended, was Sir Robert Graham, uncle of the Earl of Strathearn. He had been imprisoned 1425, on the impeachment of the Albany family. By this, or by some real or imaginary injury to his family, Graham was so irritated, that in 1435 he actually used treasonable language to the king himself when presiding in parliament. For this he was banished and his possessions declared forfeited. He retired to the Highlands to brood over a plan of revenge, which circumstances soon put it into his power to execute. In 1437, the court held the Christmas festival at Perth. The king was about to retire for the night, when the sound of men in armor was heard outside the gates. It was Graham, accompanied by 300 armed men. The locks of the chamber-door having been purposely spoiled, Catherine Douglas, with a spirit worthy of her name, thrust her arm into the staple, to make it serve the purpose of a bar; but her arm was broken and the ruffians entered the chamber. The king, who had hidden himself in an aperture under the floor, was discovered, dragged out, and murdered, in the 44th year of his age. Graham and other ringleaders were afterward seized, tortured, and put to death. J. was unquestionably the most able of the Stuart

JAMES II.

family: both his intellectual and his practical ability were of very high order.

JAMES II., King of Scotland: 1430-1460, Aug. 3 (reigned 1437-60); twin son of James I. and Queen Johanna. He was crowned at Holyrood in the sixth year of his age. Sir William Crichton, the chancellor, and Sir Alexander Livingston, contrived to keep possession of the person of the young king, and consequently to wield the royal authority until he had reached his 14th year. The power of the House of Douglas had now risen to so great a height as to almost overshadow that of the crown. In the hope of curbing it, Crichton had treacherously caused William, the young earl, and his brother to be put to death. The policy of the act proved as bad as its spirit, for by the marriage of the heiress of the murdered youth with her cousin the family was restored to more than its former power. The young king, tired of the rule of Crichton, put himself under the control of Douglas. A parliament was held, by which Crichton and Livingston were declared rebels, and their estates forfeited. Under the rule of the earl, the kingdom fell into anarchy, and became one scene of violence and disorder. Douglas, however, maintained the warlike renown of his House; in 1448, the English having invaded Scotland, he gave them battle on the banks of the little river Sark, in Annandale, and defeated them with much slaughter. In 1449, J. married Mary, daughter of Arnold, Duke of Gelderland. The character of the king appears to have been much strengthened after his marriage. Like most of the Stuarts, he had great animal courage; he seems to have had also much of his father's clearness of perception in framing laws, and of his energy in enforcing them. Chafing under the sway of Douglas, he resolved to assert his independence. Crichton, who had previously contrived to make terms for himself, was constituted the royal adviser. Douglas, driven from power, formed an alliance with the Earl of Crawford. By the union of these two powerful nobles, it seemed that the royal authority in Scotland had virtually become extinct. J. had recourse to what has the seeming of treachery: he invited Douglas to visit him at Stirling Castle, where, picking a quarrel with him on his refusal to break the engagements which he had made with the other nobles, J., in either a real or pretended fit of passion, stabbed him, after which the murder was completed by Sir Patrick Grey. But the power of the Douglas family was not yet broken. Through the aid of the House of York, then dominant in England, and by the martial influence of his name, the heir of the murdered earl was enabled to raise the standard of rebellion at the head of an army of 40,000 men. But J., listening to the wise advice of his councilor Kennedy, soon succeeded in quelling this insurrection. Douglas was compelled to flee; and his lands were granted to the Earl of Angus. In 1460, J., taking advantage of the War of the Roses, then wasting the strength of England, infringed an existing truce with England, by laying siege to the castle of Roxburgh, in Scotland, then held by the English. While he was stand-

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ing beside one of the rudely made cannon of that time, the gun burst, and a fragment striking him, produced almost immediate death.

JAMES III., King of Scotland: 1452, June 1—1488, June 11 (king 1460–88): son of James II. and Mary of Gelderland. On the death of his father the government appears to have been conducted by his mother, guided by the wisdom of Bp. Kennedy. On the death of the bishop, 1465, the young king fell into the hands of Lord Boyd and his family; and 1467, so great influence had they acquired, that J. gave his sister in marriage to Sir Thomas Boyd, son of Lord Robert, Sir Thomas being at the same time created Earl of Arran. On the king's marriage, however, 1469, with Margaret of Denmark, power changed hands: Lord Boyd was obliged to flee; and even Arran was driven into exile, in which condition he died. In 1474, his widow married Lord Hamilton; of which marriage were born James, created Earl of Arran 1503, and Elizabeth, who married Matthew, Earl of Lenox. J. was all his life under the influence of favorites. Conspicuous among these was a man named Cochran, originally a mason. Through his means, the Duke of Albany, brother of J., was compelled to flee from the kingdom, having been charged with witchcraft; while the Earl of Mar, another brother of the king, was, it is said, put to death on the same absurd accusation; though another account is that he died under circumstances that caused suspicion of his murder. The rule of Cochran and other low-born favorites became intolerable to the haughty Scotch nobility. Disputes having arisen with England, and an English force having advanced on Berwick, J. put himself at the head of an army to oppose the invaders. Angus, Crawford, Argyle, and others resolved to profit by this opportunity to rid themselves of the obnoxious favorite. They met in council to deliberate upon their plans: it was on this occasion that Angus acquired his well-known soubriquet of 'Bell the Cat.' The result was, that Cochran and five other of the leading favorites were seized and summarily hanged, and the king himself was carried a captive to the castle of Edinburgh. The banished Duke of Albany had joined the English army. On a treaty being made, he was, by some unknown means, restored to his brother's favor; he appeared at Edinburgh, demanded and secured the king's liberty, and for a time administered the government. He did not long hold it, however, but was compelled again to flee to England. In 1487, Margaret of Denmark died. J.'s love of pursuits which, for the age in which he lived were intellectual, brought on him the contempt of a warlike and illiterate nobility—a contempt on which the weakness of his moral character imposed no check. A conspiracy, whose origin is obscure, ended in a rebellion, having for its avowed object the dethronement of the king. Many of the peers, however, remained loyal, so that J. was enabled to put himself at the head of a considerable force. But, mainly through the cowardice of the king, the royal army was defeated at Sauchie, 1488. June 18, J. escaping from

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the field, was thrown from his horse, carried to a cottage, and there discovered by one of the rebels, and murdered.

JAMES IV., King of Scotland: 1472, Mar. 17—1513, Sep. 9 (reigned 1488–1513); son of James III. and Margaret of Denmark. A movement, headed by the Earl of Lennox, having for its object the subversion of the new government, was soon quelled; and the rule of the young king gave promise of being both vigorous and popular. The avarice of the preceding reign was followed by a profusion which conciliated the nobles; while the king's personal beauty and open manner won the hearts of the common people, and caused them to overlook the libertinism of his conduct. The naval exploits of Sir Andrew Wood of Largo, in the beginning of this reign, are worthy of note: with a greatly inferior force, he twice defeated the English; on one occasion, capturing five of their ships of war. Instead of avenging this defeat by force of arms, Henry VII., then reigning in England, wisely resolved to endeavor to win Scotland by conciliation and policy. He proposed a marriage between J. and his daughter Margaret, but his wise schemes were long frustrated by the gold and intrigue of the king of France. But at length the prudence of Henry prevailed, and 1503, J. married Margaret of England, thus opening the way for the ultimate accession of the Stuarts to the throne of England. By a treaty then entered into between England and Scotland, the first peace since 1332 was established between the two countries. The king of England saw what none of his predecessors had been able to see—that he could easily gain by policy what it was hopeless to attempt to seize by force. Had he lived longer, a lasting amity might have been established between the two countries; but his son and successor, Henry VIII., was of far different spirit. The English treaty was followed by a period of almost unexampled peace and prosperity; but by the death of Henry VII., 1509, all this fair prospect was destroyed. When Henry VIII. had been two years on the throne, a rupture took place between the two kings. J. had demanded reparation for an alleged outrage on the Scottish flag; Henry had returned a contemptuous answer. He had further irritated the Scotch king by countenancing certain English border chieftains who had been accessory to the murder of Sir Robert Ker; he had also declined to deliver a legacy of jewels bequeathed to Queen Margaret by her father. Long and angry negotiations followed, which ended in James's rash and fatal invasion of England in the summer of 1513. The disastrous battle of Flodden (q.v.) was fought Sep. 9. The defeat of the Scotch was due to the rash bravery of J., whose body was found on the field after the battle.

JAMES V., King of Scotland: 1512, Apr. 10—1542, Dec. 14 (king 1513–42); b. Linlithgow; son of James IV. and Margaret of England. The period of his long minority is one of the gloomiest in Scottish history. Such was the lawless state of the country, that it was unsafe to

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pass from one town to another except in armed companies. The Duke of Albany was chosen regent by the parliament, but his government was almost powerless, owing chiefly to the jealousy and enmity of the Earl of Angus, who had married the queen-mother. Ultimately, Angus prevailed, and the duke retired to France. For a while, the Angus branch of the Douglas family ruled Scotland in the same manner as the elder branch had ruled it in the beginning of the reign of James II. In his 17th year, the king resolved no longer to brook the authority of the earl, and escaped from his custody. Angus and his family were banished, and their estates declared forfeited. In 1536, J. visited the court of France; and 1537, Jan. 1, he was married to Magdalen, daughter of Francis I. This amiable queen lived but a few weeks; and in the same year, J. was again married. His second wife was Mary of Lorraine, daughter of the Duke of Guise. Henry VIII. having declared his independence of the pope, became desirous that his nephew J. should follow his example; but J. remained true to his ancestral faith. The king had two sons by Mary of Guise, but both died in infancy, within a few days of each other—an event which seems to have greatly affected the mind of James. With the view of gaining his nephew over to his ecclesiastical views, Henry proposed that they should have an interview at York, and actually went to that city, and remained six days, expecting the arrival of J., who never came. This real or fancied neglect enraged Henry. In 1542, the English having made an incursion across the border, were attacked and defeated with great loss by the Earls of Huntly and Home. To avenge this defeat, Henry sent the Duke of Norfolk into Scotland with an army of 20,000 men.

Negotiations for peace having failed, J. raised an army of 30,000 men to oppose Norfolk. The spread of the Reformation had now begun to divide the kingdom; the nobles being mostly on the reformed side, while the king sided with the clergy. When the Scottish army had reached Fala, news arrived of Norfolk's retreat. The nobles, actuated either by disloyalty, or by thoughts of Flodden, declined to follow the king in an invasion of England, upon which he was bent. While this controversy was pending between J. and the nobles, a report arose that Oliver Sinclair, a royal favorite, had been appointed to the chief command. This completed the tumult and disorder of the army, and in this disorganized state it was attacked by Dacre and Musgrave, two English leaders, at the head of 300 men. The Scotch were utterly routed. This dishonor to his arms seems to have broken the heart of James. He shut himself up in Falkland Palace, where he died, 7 days after the birth of his unfortunate daughter Mary, Queen of Scots (q.v.).

JAMES I., King of England, and VI. King of Scotland; 1566, June 19—1625, Mar. 25 (reigned, England 1603–1625; king of Scotland 1567–1625); b. in the castle of Edinburgh; only son of Mary, Queen of Scots, and Henry Lord Darn-

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ley. On his mother's forced abdication, J. was proclaimed king of Scotland. During his infancy, the kingdom was under the regency successively of the Earl of Murray (assassinated 1570), the Earl of Lennox (killed 1571), the Earl of Mar (d. 1572), and the Earl of Morton (beheaded 1581). The direction of J.'s childhood developed principally on the Earl of Mar. His classical education he received from the famous George Buchanan. In 1578, the Earl of Morton, then regent, was driven from power, and J. nominally assumed direction of affairs. But the new government was unpopular, and Morton soon succeeded in re-establishing himself. His fall was, however, ultimately effected by the united influence of the Duke of Lennox and of the Earl of Arran. Morton was condemned and put to death on the charge of having been accessory to the murder of Darnley. After his death, Lennox and Arran ruled for some time without control. 1582, Aug. 12, however, a party of the nobles seized the king at Ruthven Castle; and by authority thus acquired, they imprisoned Arran, and banished Lennox. In 1583, a counterplot, restored J. to freedom: he immediately restored Arran to power, and the confederate lords fled to England. In 1585, through connivance of Queen Elizabeth, they returned, and with an army of 10,000 men, obliged J. to capitulate in Stirling Castle. Arran was again banished. In 1586, Queen Mary, then a prisoner in England, was condemned by the English court to be beheaded. Though J. remonstrated strongly, he nevertheless, after the execution of his mother, concluded an offensive and defensive alliance with England. In the winter of 1589, J. went to Denmark, where he married Princess Anne, daughter of Frederick II., king of that country. 1591-94, the kingdom was disturbed by various treasonable attempts by the Earls of Bothwell, Huntly, and other Rom. Cath. lords. It was not till J. had marched against Huntly in person that these disturbances were suppressed. Long ecclesiastical disputes followed between king and clergy. In 1600, occurred the Gowrie Conspiracy (q.v.). By the death of Elizabeth 1603, J. succeeded to the throne of England. Soon after his removal to London, he became unpopular with his new subjects. The anger of the Rom. Catholics at the severities used toward them was the cause 1605 of the famous Gunpowder Plot (q.v.). Time did not increase the popularity of J. with any class of his subjects. Weak and good-natured, he impoverished his exchequer to enrich parasites; he degraded the prerogative of the crown by the sale of titles of dignity; the title of baronet, which he originated, could be bought for £1,000, a barony for £5,000, and an earldom for £20,000. A Scotchman of the name of Carr became the royal favorite about 1607; honors and emoluments were showered on him, and 1613 he was created Earl of Somerset. In his turn, Somerset gave place to Buckingham. Under these minions, the name and power of England, so formidable under Elizabeth, sank to insignificance. In 1617, J. revisited Scotland; a visit which his angry disputes with the clergy did not give him much leisure to en-

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joy. In 1619, his eldest son, Henry, Prince of Wales, died, to the great grief of the nation. J. had set his heart upon effecting a marriage between his son Charles (now Prince of Wales) and a Spanish princess. For some time it seemed that his design would succeed; and 1623, Charles actually went to the court of Spain, with Buckingham, to prosecute his suit. Buckingham, however, having quarrelled with the leading men of the Spanish court, the negotiation ultimately failed through his pique, to the intense disgust of the English nation. A war with Spain was the result.—J. was aptly termed by Sully ‘the wisest fool in Christendom.’ ‘He was indeed,’ says Macaulay, ‘made up of two men, a witty, well-read scholar, who wrote, disputed, and harangued, and a nervous, drivelling idiot who acted.’ J. had some shrewdness and knowledge of character, but had no breadth of view or steadfastness in action; reckless and obstinate in small things, he was irresolute in greater. He was devoid of courage, was overwhelmed in self-conceit of his own intellectual powers, and was convinced of the divine right of kings. He disliked Calvinism and Presbyterianism, and sought to introduce into Scotland a modified Episcopacy. He thought it shrewd to favor all parties in turn, including the Romanists, and to play off one against the other. His fussy self-importance and his elaborate absurdity make him a dismal and ridiculous figure in history. His reign is interesting to the student of English constitutional history, as it was during it that parliament took its first decided stand in its long contest with the crown. The parliament of 1621 especially is memorable on this account.

JAMES II., King of England, and VII., King of Scotland: 1633, Oct. 15—1701, Sep. 6 (reigned 1685–88); b. at the palace of St. James’s; second surviving son of Charles I. and Henrietta Maria. In 1643, he was created Duke of York. In 1648, during the civil war, he made his escape to France. He served in the French army under Turenne; but on peace being made with Cromwell, he was obliged to leave both the army and territory of Louis XIV. He then entered into the military service of Spain. At the Restoration he was made lord high admiral of England, twice commanding the English fleet in the ensuing wars with the Dutch. In 1660, he married Anne, daughter of Lord Chancellor Hyde. On her death, 1671, J. avowed his conversion to popery. On the passing of the Test Act (q.v.) 1673, requiring from all officials declarations which could not be made by Rom. Catholics, he was obliged to resign office. 1673, Nov. 21, he married Mary Beatrice, daughter of the Duke of Modena. During the great irritation against the Rom. Catholics which arose in England on the publication of Titus Oates’s supposed discoveries, J. as Duke of York resided for a short while on the continent. The bill for his exclusion from the throne was twice read before the house of commons, and prevented from passing only by the prorogation of parliament, 1679, May 26. In 1680, the Exclusion Bill passed in the house of commons, but was rejected in the house of lords. On his return from abroad, and

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While the Exclusion Bill was before parliament, he was sent to govern Scotland, where he persecuted the Covenanters. On the death of Charles II., 1685, Feb. 6, J. succeeded to the crown without opposition. He had been but few hours a king when he violated the fundamental laws of the constitution by continuing the levy of customs, settled on the late king for life only, without the authority of parliament. At war with his parliament, in order to obtain money, J. was forced to become the temporary vassal and pensioner of Louis XIV. of France. In Passion Week 1685, the rites of the Church of Rome were openly celebrated at Westminster with full splendor. In the same year, the suppression of the Duke of Monmouth's rebellion in England, and that of the Earl of Argyle in Scotland, was followed by the most frightful severities. On the western circuit alone, well known as the Bloody Assize, presided over by the infamous Jeffreys, 320 persons were hanged. On the meeting of parliament 1685, Nov. 9, J. requested extra supplies to maintain a standing army, which was a favorite scheme of his. He noticed in his speech, that in some recent appointments he had thought fit to dispense with the Test Act. After a stormy debate, government was finally beaten on the question of supply. To aid his endeavors in favor of the Rom. Catholics, J. resolved to try to conciliate the Puritans, much as he hated them. On the 4th of April 1687, appeared the memorable Declaration of Indulgence, in which he announced his intention of protecting dissenters in the free exercise of their religion; and the nation beheld the extraordinary spectacle of the house of Stuart leagued with republican and regicide sects against the old Cavaliers of England. The attempt to conciliate the Puritans was naturally unsuccessful; and 1687, March, it began to be evident that the war between king and church must soon reach a climax. At that time a vacancy having occurred in the presidency of Magdalen College, Oxford, a royal letter came down recommending Anthony Farmer, Rom. Catholic, to the vacant place. For Farmer was afterward substituted Parker, Bishop of Oxford, known to be a Rom. Catholic, though not avowed; besides which, he labored under other legal disqualifications. The fellows of the college declined to elect him. A special ecclesiastical commission was then sent to Oxford, escorted by three troops of cavalry with drawn swords. Parker was installed, the fellows expelled, and declared for ever incapable of holding any church preferment. 1688, Apr. 27, J. published a second Declaration of Indulgence; this he ordered to be read in all the churches in the kingdom. The order was generally disobeyed by the clergy, and seven of the bishops having ventured on a written remonstrance, were committed to the Tower on a charge of seditious libel. June 10 of the same year J.'s luckless son, known in history as *The Pretender*, was born: see STEWART, THE FAMILY OF: JACOBITES (in British history). The history of the trial and acquittal of the seven bishops, 1688, June 29, forms one of the most glowing passages in the splendid narrative of Macaulay. On the night of the same day, an

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invitation was dispatched to William, Prince of Orange, signed by seven leading English statesmen, to come over to England to occupy the throne. Nov. 5, William landed at Torbay with 14,000 men. J. found himself deserted by the nobility, gentry, and army; even his own children turned against him. He retired to France, where he was hospitably received by Louis XIV., who settled a revenue upon him. Early in March in the following year, he made a hopeless attempt to regain his throne by invading Ireland with a small army, with which he had been furnished by the king of France; but his irresoluteness led to his total defeat at the battle of the Boyne (q.v.) 1690, July 1. He escaped to France, whence Louis XIV. projected two expeditions against England in his favor—one 1692; the other to follow an assassination 1696, Feb. 10; both plots were discovered and foiled. J. resided at St. Germain's till his death. There is hardly a sovereign in history of whom less good can be said than of James II.

JAMES, GEORGE PAYNE RAINSFORD: 1801–1860, May 9; b. London: fecund and popular novelist. He commenced authorship at an early age. Before the age of 17, he wrote seven eastern tales, entitled *The String of Pearls*; but the first work that bore the author's name was *Richelieu*, 1825. From this period till his death in Venice, where he had been for two years British consul, his publications were almost incessant. The principal are—*Darnley*, *De L'Orme*, *Philip Augustus*, *Henry Masterton*, and *Mary of Burgundy*. He also composed some poetry, and several historical works of a biographical kind, e.g., *Charlemagne*, *The Black Prince*, and *Richard Cœur de Lion*. J.'s writings are cheerful and pleasant in spirit; but his notions of the romantic, whether in scenery or character, are entirely conventional, and are often laughably juvenile.

JAMES, HENRY: 1811, June 3—1882, Dec. 18; b. Albany, N. Y.: theologian. He graduated at Union College, Schenectady, 1830, studied law in Albany and theology at Princeton Theol. Seminary, left the latter without graduating on account of his strong unorthodox opinions, studied theology and philosophy in Europe, and became a believer in Sandemanian and Swedenborgian doctrines, and after his permanent return to the United States became an associate of the leading transcendental philosophers though rejecting many of their views, and in his later years tending toward a decided though broad and catholic evangelicalism. He published *What is the State?* (1845); *Letter to a Swedenborgian* (1847); *Moralism and Christianity, or Man's Experience and Destiny* (1850); *Lectures and Miscellanies* (1852); *The Church of Christ not an Ecclesiasticism* (1854); *The Nature of Evil* (1855); *Christianity the Logic of Creation* (1857); *Substance and Shadow* (1863); *The Secret of Swedenborg, being an Elucidation of his Doctrine of the Divine Natural Humanity* (1869); and *Society the Redeemed Form of Man*.

JAMES, HENRY, Jr.: novelist: b. New York, 1843; son of Henry J. (1811–82), who was known as an author

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on religious and philosophical questions. The novelist spent some years of his youth in Europe, studied law for a while at Harvard; but ultimately applied himself to literature, beginning with contributions to the *Galaxy* (afterward *Scribner's Monthly*). His first novel, *Watch and Ward*, appeared in the *Atlantic Monthly*. He formerly resided in Cambridge, Mass., but for several years has lived mainly in London. His works, which deal chiefly with the uneventful lives of Americans wandering in Europe, are novels of character rather than of incident, and comprise: *A Passionate Pilgrim*, *Roderick Hudson* (1875), *Diary of a Man of Fifty*, *Point of View*, *The American*, *The Europeans*, *Daisy Miller*, *Washington Square*, *Siege of London*, *Lady Barberina*, *A New England Winter*, *The Bostonians*, *Portrait of a Lady* (1881). He has also written a short life of Hawthorne, and many essays, sketches, and magazine articles. Among his critical essays is *French Poets and Novelists*. His literary work is of the nature of exquisite artistic tracery; his diction has an admirable grace and finish; but he is criticised for too elaborate explanation of character and motive, and too voluminous dialogue, and a certain disregard of perspective in his personal delineations.

JAMES, JOHN ANGELL: 1785, June 6—1859, Oct. 2; b. Blandford, Dorsetshire, England: Congregational minister. He studied a short time at a dissenting college at Gosport, and was placed on the 'preaching list' at the age of 17. At the age of 20, he was settled as pastor of the 'church meeting in Carr's Lane,' Birmingham, where he remained till his death. For the first seven years his preaching drew little attention; then suddenly he became very popular, and drew great crowds wherever he officiated in England. In the course of years, Angell James came to be considered the most important and powerful public man in connection with his own denomination; and on account of his 'evangelical' views of religion, he was much esteemed also both by the Low-Church party in the English Establishment, and generally in Scotland and America. He published a multitude of sermons, tracts, addresses, and small religious volumes (the best known being the *Anxious Inquirer*), which had—and some of them still have—a vast circulation. He received the degree D.D. from the College of New Jersey, and from the Univ. of Glasgow.—See Dale's *Life and Letters of John Angell James* (Lond. 1862).

JAMES RIVER: formed by the union of the Jackson and Cowpasture streams, rising near the middle of Virginia, and having its entire course in that state. It flows e.s.e., passing through Lynchburgh and Richmond; and widening into an estuary for the last 60 m. of its course, it falls into the Atlantic at the s. extremity of Chesapeake Bay. It is 450 m. in length, and is navigable to Richmond, 150 m. from its mouth. Its chief tributaries are the Appomattox on the right, and the Chickahominy on the left bank, both made historical by events in the war of secession. It was at Jamestown (q.v.), 32 m. from the mouth of this river, that the first English settlement in

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America was made, 1607. By the James river and Kanawha canal, which extends westward along the upper course of the river, from Richmond to beyond the Blue Ridge, the navigation of the James is carried into the centre of Virginia.

JAMES, THOMAS LEMUEL, LL.D.: banker: b. Utica, N. Y., 1831, Mar. 29. He received a common-school and academic education, learned the printer's trade, bought the *Madison County Journal* (whig) of Hamilton, N. Y., 1851, merged it with the *Democratic Reflector* as the *Democratic Republican* 1856, and followed journalism 10 years; became inspector of customs in New York 1861, weigher 1864, deputy collector 1870, postmaster 1873 and 77, and postmaster-gen. of the United States 1881, retiring from the latter office 1882, Jan. 4. While in the custom-house he reorganized the methods of business in his departments, to the manifest improvement of the service; in the New York post-office he multiplied the local deliveries, expedited the foreign mail service, and added largely to the security of the mails; and as postmaster-gen. effected an annual saving of more than \$2,000,000 by reductions in the notorious 'star-route' and steamboat services, and instituted a thorough investigation into the abuses and frauds of his dept. which resulted in the 'star-route' trials. On retiring from public office he became pres. of the Lincoln national bank and the Lincoln Safe-deposit Company of New York. He received the degree LL.D. from Madison Univ. 1883, and St. John's College 1884.

JAMES FREDERICK EDWARD STEWART: see STUART, THE FAMILY OF: JAMES II. (of England): JACOBITES.

JAMES ISLAND: one of the group of sea islands belonging to Charleston co., S. C.; s. of Charleston harbor and Ashley river; extending from the harbor on the n.e. to Stone Inlet on the s.w. Before the civil war it was noted for large production of the high-grade sea-island cotton, and during the war the battle of Secessionville (1863, June 11) and other engagements were fought on it. Pop. (1900) 2,570.

JAMESON, *jā'mē-son*, ANNA (MURPHY): English authoress: 1794, May 19—1860, Mar. 17; b. Dublin; daughter of Mr. Murphy, a painter. In 1825 she married Mr. Jameson, a barrister, but afterward separated from her husband, and applied herself to literature. Her principal works are—*Diary of an Ennuyée* (1826); *Loves of the Poets* (1829); *Characteristics of Shakespeare's Women* (1832); *Memoirs of the Early Italian Painters*, etc. (1845); *Sacred and Legendary Art* (1848); *Legends of the Monastic Orders* (1850); *Legends of the Madonna* (1852); *Commonplace Book of Thoughts, Memories, Fancies* (1854); and *The Scriptural and Legendary History of our Lord*, etc., as represented in *Christian Art* (1860).

In her writings Mrs. J. evinces a fine fancy, a delicate, womanly perception of the beautiful, and a genuine poetic enthusiasm. Mrs. J., in her series of *Sacred and Legendary*

JAMESON—JAMES'S ST., PALACE.

Art, rendered a distinct service to all students in that department. She brings a fine taste and a penetrating judgment to the guidance of her readers. In her later works she dealt with social questions and great moral interests, in a manner vigorous, temperate, and clear—e.g. *The Relative Social Position of Mothers and Governesses*. The *Memoirs of the Life of Mrs. J.* appeared 1878.

JAM'ESON (or JAMESONE), GEORGE: prob. 1587–1644; b. Aberdeen: Scotch portrait-painter, called by Walpole *the Van Dyck of Scotland*. Of his early history, nothing is known. He was at Antwerp 1616, studying under Rubens; had Van Dyck as fellow-pupil, and returned to Scotland 1628. He was patronized first by Sir Colin Campbell of Glenorchy, for whom he painted many portraits of the kings and queens of Scotland; among others, 'Robert Bruce' and 'David Bruce.' His great talents were soon acknowledged, and he was largely patronized by the nobility, and 1633 Charles I. sat to him. He died at Edinburgh. Though the pupil of Rubens, and associate of Van Dyck, his productions bear very little resemblance to those of either of these great masters; distinguished for their clearness of outline, delicacy, and softness of shading, and beauty of color, they have neither the richness of the former nor the vigor of the latter. Though celebrated only as a portrait-painter, he has left numerous historical, miniature, and landscape pieces. His productions are very numerous; the largest collection is in the possession of the Earl of Breadalbane; and many others of the Scotch nobility possess paintings by him; there are also several in the halls of the Univ. of Aberdeen.

JAM'ESON, ROBERT: regius prof. of nat. history in the Univ. of Edinburgh: 1774, July 11—1854, Apr. 28; b. Leith, Scotland. He went 1800 to Freyberg, to study nat. history under Werner; and was elected 1804 to the professorship in the Univ. of Edinburgh. In 1809, he published *Elements of Geognosy*, in which he gave a comprehensive exposition of the Neptunian theory as modified by Werner. In 1819, he founded, with Sir David Brewster, the *Edinburgh Philosophical Journal*, and 1826 the *Edinburgh New Philosophical Journal*, of which he was the editor till his death. Others of his principal works are: *System of Mineralogy* (1804); *Mineralogical Description of the County of Dumbarton* (1805); *Manual of Minerals and Mountain Rocks*, etc. (1821); *Elements of Mineralogy* (1837). He was a fellow of almost all the learned societies of Europe.

JAMESONITE, n. *jām'sūn-īt* [after Prof. *Robert Jameson*]: an ore consisting principally of the sulphides of lead and antimony.

JAMES, ST., LITURGY OF: see LITURGY.

JAMES'S, ST., PALACE: large inelegant brick structure in London, fronting toward Pall Mall. It succeeded Whitehall as the London residence of the British sovereigns, and remained as such from William III. to Victoria. It was reconstructed and made a manor by Henry

JAMES'S BAY—JAMESTOWN.

VIII., having before been a hospital dedicated to St. James; Henry also annexed to it a park, which he inclosed with a brick wall, to connect St. James's with Whitehall, then the royal residence. Additions and improvements gradually made, totally changed the original palace, so that, at present, little of the old structure remains. In 1837, the royal household was transferred to Buckingham Palace, and St. James's is now used only for levees and drawing-rooms.—The Court of St. James's is the usual designation of the British Court.

ST. JAMES'S PARK lies southward from the palace, and covers 87 acres. Within the last 40 years, it has been greatly improved, and is now richly embellished with avenues of trees, and a fine piece of water in the centre stocked with waterfowl. On the e. side is *the Parade*, where the body-guards on duty are mustered, and where the regimental bands perform in fine weather. On the outskirts are the Buckingham and St. James's Palaces, Stafford House, Marlborough House, etc.

JAMES'S BAY: southerly arm of Hudson's Bay, lat. 51° to 55° n., and in long. 79° to $82^{\circ} 30'$ w. It is so beset with islands, that its navigation is more dangerous than that of the other divisions of the same inland sea. Near its s. extremity is Moose Factory, the most important station, next to York Factory, of the Hudson's Bay Company on the coast.

JAMES'S POWDER: a patent medicine discovered by Dr. Robert James, who was admitted a licentiate to the College of Physicians in London 1765, and died 1776, aged 73. The fame that he might otherwise have acquired was tarnished by his patenting his 'fever powders,' and still more by his falsifying the specification to such an extent as to render it impossible to prepare the powder from his directions. Hence the *Compound Powder of Antimony* has been substituted for it in the British pharmacopœias. From the analysis of the patent medicine, for which one or two London chemists assert that they have the true original prescription, it appears to consist of more than 50 per cent. of triphosphate of lime, which must be altogether inert as an anti-febrile medicine; of from 35 to 45 per cent. of antimonious acid, and a little antimonite of lime and teroxide of antimony. The pharmacopœial preparation very closely resembles it. Both James's Powder (prescribed under the title *Pulvis Jacobi veri*) and antimonial powder are very uncertain in their operation, at one time possessing considerable activity, and at another being almost inert. Either may be prescribed in doses of about 5 grains, as a sudorific in fevers and rheumatic affections, and may be given alone, or in combination with a few grains of calomel.

JAMESTOWN: city of Chautauqua co., N. Y.; at the s. extremity of Chautauqua Lake, and on the New York Lake Erie and Western, Atlantic and Great Western, Buffalo and J., and Dunkirk Alleghany Valley and Pittsburg railroads; 27 m. s.e. of Lake Erie, 70 m. s.w. of Buffalo.

JAMESTOWN.

416 m. n.e. of Cincinnati, 446 m. w. by n. of New York. It is built on both the sloping sides of the tortuous and deep outlet of the lake; contains 10 churches (cost \$200,000), J. Union School and Collegiate Institute (organized 1863 by combining the Union Free School 1815 and the J. Acad. 1836), 4 brick and 4 wooden school-houses, 1 nat. bank (cap. \$153,300), 2 state banks (cap. \$225,000), 8 hotels, numerous manufactories, and large city and suburban dairy interests, and is lighted by natural gas. It was settled 1810, incorporated 1827, and named after James Prendergast. The First Church (Congl.) was organized 1816, June, and now has a meeting-house that cost \$45,000; the First Meth. Epis. Church 1823; the First Bapt. Church 1832; the First Presb. Church 1834; and St. Luke's Prot. Episc. Church 1853. Pop.(1880) 9,357; (1890) 16,038; (1900) 22,892. See CHAUTAUQUA INSTITUTIONS.

JAMESTOWN, *jāmz'town*: city, cap. of Stutsman co., N. Dak.; on the James river and the Northern Pacific railroad; 90 m. w. of Fargo. It has a strikingly picturesque location in the fertile valley of the James and on the e. side of the river, where the bluffs are from $\frac{1}{2}$ to 1 m. from the bank; has partaken of the phenomenal growth of the entire terr., having been settled largely by persons of means from the e. states. It contains a graded school, several churches (costing from \$10,000 to \$20,000 each), 1 national bank (cap. \$50,000), 1 private bank, costly stone court-house, state insane hospital, hotel, roller-mills, and grain elevators, and several manufactories. The co. was organized 1873; and J. had a pop. (1880) of 393. In 1889, Aug., it was an unsuccessful candidate for the cap. of the new state of N. Dak., but the constitutional convention in providing and locating public institutions gave it an additional institution—the state asylum for the feeble-minded—and directed the legislature to appropriate 20,000 acres of congressional-grant lands for its support. Pop. (1890) 2,296; (1900) 2,853.

JAMES TOWN: island in James river, Va., 32 m. above its mouth, forming with Williamsburg city a district of James City co., about 45 m. n.w. of Norfolk. It was the site of the first English settlement in the United States, a band of 107 colonists under command of Christopher Newport having sailed up the James river (which they named after their reigning sovereign) from the Chesapeake, 1607, Apr. 26. They began a town on a peninsula projecting from the n. bank of the river May 13. The first colony was saved from discouragement and dispersion by the activity of Capt. John Smith (q.v.) and the friendly offices of the Indian maiden Pocahontas (q.v.). A second company settled there 1608, a third and larger one 1609; Lord Delaware, the charter gov., arrived 1610. Sir Thomas Dale brought 300 more settlers and some cattle the same year, and Sir Thomas Gates a fifth band 1611. J. became the capital of the colony, and the first legislative assembly ever convened in British America met here 1619, June 29. Williamsburg was settled 1632, and the seat of govt.

JAMES TOWN—JAMS AND JELLIES.

was soon afterward removed thither from J., which then began to decline. It was burned by Nathaniel Bacon in the 'Bacon' rebellion 1676, and has never been rebuilt. In 1781 it was the scene of an engagement between the troops of Gen. Wayne and Lord Cornwallis.

JAMES TOWN: chief town and only seaport of St. Helena (q. v.).

JAMIESON, or **JAMESON**, *jā'mī-son*, **JOHN**, D.D.: 1759, Mar. 3—1838, July 12; b. Glasgow: Scotch scholar. He studied for the ministry, and 1781 was ordained pastor of a congregation at Forfar, in connection with the Anti-burgher Secession body. In 1797, he was transferred to Edinburgh, where he died. J.'s reputation as a man of letters rests on his *Etymological Dictionary of the Scottish Language* (1808-9; supplement 1825. Various new editions have appeared, a good one in 1880-82.) It is a work of great industry, and considerable value as a collection of Scotch words, phrases, customs, etc.; but it has little critical or philological merit, according to the present standard. His preliminary dissertation on the 'Origin of the Scots' Language' is an elaborate but unsuccessful attempt to prove that the Scottish Language is really the Pictish language; and that the Picts were not Celts, but Scandinavian Goths. Among J.'s other performances may be mentioned *An Historical Account of the Ancient Culdees of Iona* (1811); *Hermes Scythicus, or the Radical Affinities of the Greek and Latin Languages to the Gothic* (1814); *An Historical Account of the Royal Palaces of Scotland*; an ed. of Barbour's poem, *The Bruce* (1820); and Blind Harry's *Sir William Wallace*.

JAMPAN, n. *jām'pān* [Japanese]: a sedan-chair, supported between two bamboo poles, and borne by four men. **JAMPANEE**, n. *jām-pān-ē'*, one of the bearers of a jampan.

JAM'ROSADE: see **EUGENIA**.

JAMS AND JEL'LIES: preserves of various juicy fruits prepared by boiling with sugar. Jams are thick opaque preparations sometimes containing the whole fruit, and at others the fruit more or less bruised or broken: jellies are transparent preparations of juices alone. While a large proportion of housewives make a business of putting up quantities of J. and J. for domestic consumption, the demand for them is so great that in recent years manufacturing of very large dimensions have been established in the United States and England for preserving fruits in various ways. The principal fruits used for jam-making are plums, apricots, cherries, currants, gooseberries, strawberries, raspberries, mulberries, cranberries, oranges, quinces, rhubarb, apples, and pears. Nearly all of these are used likewise for jellies; and water-melons, muskmelons, and pine-apples also are preserved in a form between a jam and a jelly. In commercial J. and J. large quantities are made from starch, isinglass, and other gelatin-yielding substances, flavored with a concentrated extract of the particular fruit imitated, and artificially colored. The natural gelatinizing property of fruit is a

JAMU—JANAUSCHEK.

gummy constituent called *pectin*, a non-nitrogenous body found only in very ripe fruit. Growing and partially ripened fruit contain an allied property called *pectose*, which is readily transformed into *pectin* by the action of heat, and such a transformation takes place in the boiling of the juices of acid unripe fruits. The less fruits are squeezed the more transparent will be the resulting jelly; and in most cases it is necessary to apply heat or boiling to hard fruits to force the juice to flow freely. Every housewife has her own rule about the quantity of sugar necessary for successful preserving, as well as the method of sealing the receptacle. Manufactured J. and J. are put up in wooden pails the same as 'black butter,' in earthenware jars and pots, in wide-mouth glass bottles, and in small glass tumblers. There are several patented forms of glass jars for general preserving, the peculiarities being in the form of stopper and method of holding it in place. These jars are generally set in pans of hot water, and the preserves poured in hot and allowed to overflow slightly. Then the stoppers are applied and screwed or otherwise tightened sufficiently to prevent the contents running out when the jar is inverted; the jar is set aside to cool, and the stopper is then fully tightened.

JAMU, *jām-ō'*: town and fort in the n. of the Punjab, among the southerly Himalayas, on an affluent of the Chenab. Pop. 8,000.

JANAPA, n. *jān'ā-pā*: the hemp of India which furnishes a valuable fodder, gunny-cloth and cordage being also made of it.

JANAUSCHEK, *yá'now-shěk*, FRANCESCA ROMANA MAGDALENA: actress: b. Prague, Bohemia, 1830, July 20. She developed an extraordinary musical talent in early childhood, was a phenomenal pianist and vocalist when 10 years old, entered the Prague Conservatory to prepare for the operatic stage when 15 years old, learned the Italian language, abandoned opera for the drama, made her first appearance on the stage as Caroline in the comedy, *I Will Remain Single*, at Prague when 16 years old, and after two years of hard study became leading lady at the Stadt Theatre at Frankfort. She remained there 11 years, and then became a 'star.' She gave her first performance in the United States, in the New York Acad. of Music, 1867, Oct. 9, as Medea, and afterward played to large audiences in other cities. Returning to Germany she studied the English language, and on her second tour of the United States 1873-4, played Medea, Lady Macbeth, Marie Stuart, and other parts of a strictly tragic order in English. In 1876 she played in English in London and the chief cities of the kingdom, and was hailed as the successor of Rachel; 1884, Oct. 2, she gave a special matinee performance in the Fourteenth-street Theatre, New York, before a crowded audience of the most distinguished actors and actresses then in the city, at their request, and appeared as Mico, *Leban*, and *Cerce Encore* in her new play *My Life*.

JANESVILLE—JANG.

JANESVILLE, *jānz'vīl*: city in Rock co., Wis., on both sides of Rock river, 45 m. s.s.e. of Madison, 70 m. s.w. of Milwaukee; partly on a plain by the river, and partly on a bluff 100 ft. above it, where the public buildings are seen to great advantage. It is connected with Chicago, Milwaukee, and the towns on the Mississippi by intersecting railways. There is a large water-power, and an extensive manufacturing interest. The breeding of horses is a considerable business here. Beside excellent public schools, there are special schools for musical culture. The state asylum for the blind is here. J. was founded 1836. Pop. (1880) 9,018; (1890) 10,836; (1900) 13,185.

JANET, *zhā-nā'*, **PAUL**: French philosopher: b. Paris, 1823, Apr. 30. He was educated in the Lycée Saint-Louis and the École Normale, graduating as doctor of letters at the latter and being chosen a fellow 1848; was prof. of philosophy in the college at Bourges 1845–8, and at Strasbourg 1848–57; became prof. of logic in the Lycée Saint-Louis 1857; and of history and philosophy at the Sorbonne 1864; was elected a member of the Acad. of Sciences (section of morals) 1864; decorated with the cross of the Legion of Honor 1860; and promoted officer 1877. His *La Famille* (1855) and *Histoire de la Philosophie dans l'Antiquité et dans le Temps modernes*, 2 vols. (1858), were awarded Sorbonne prizes. His later works include *Histoire de la Science politique* (1871); *Problèmes du XIX^e Siècle* (1872); *La Morale* (1874); *Philosophie de la Revolution française* (1875); *Les Causes finales* (1876); *Saint-Simon et Saint-Simonisme* (1878); *La Philosophie française contemporaine* (1879); and contributions to regular and special scientific publications. Some of his works, notably that on Final Causes, have been translated and published in English.

JANG, Sir **SALAR** (native name, Mir Torab Ali): 1829–83: prime minister to the Nizam of Hyderabad (see **NIZAM'S DOMINIONS**); of a princely family. At an early age he obtained admission into the civil service of Hyderabad, and 1853 he became prime minister, succeeding his uncle, and rendering wise and faithful service for 30 years. He began at once to reorganize the different departments of the state, then in a deplorable condition, and to rectify old abuses. The Nizam had long neglected to fulfil his treaty obligations to England, and the state was taken temporarily under British authority to secure the payment of military debt. The roads were swarming with robbers, and each castle was a nest of brigands. Probably, only the good results attending the policy adopted by Sir S. J., prevented abolition of native rule. Further reforms were made in the army, courts of justice were established at Hyderabad, and the police force organized. The construction and repairs of works of irrigation were attended to, and schools were gradually established. During the mutiny 1857, Sir S. J. remained faithful to British interests at the risk of his life. Under the Nizam, who died in 1869, he was much hampered in his procedure; under his successor he shared with another noble the post of regent.

JANG BAHADUR—JANIN.

Besides native titles, Sir S. J. was D.C.L. of Oxford, and a knight grand commander of the Star of India.

JANG BAHADUR, Sir: prime minister to the Maharajah of Nepaul: b. before 1817; d. 1877, Feb. 25: sometimes termed the Bismarck of N. India. His uncle held a high position in the administration of affairs, but was murdered at the instigation of the queen; and a new ministry being formed, J. B. received the command of the army. When in 1846 the new premier was assassinated, J. B. fell upon an assembly of chiefs and nobles convened at the palace, and a general massacre took place, fourteen of the chiefs dying by his hand. Next day he was made prime minister; a conspiracy against him was quickly quenched in blood. The queen was afterward banished, and the heir-apparent was raised to the throne. In the mutiny of 1857, the minister sent a body of Gúrkha troops for reinforcement of the British army. When the mutiny was subdued, the Maharajah of Nepaul obtained a large extension of territory, and J. B. received from Queen Victoria a grand cross of the Star of India. He was succeeded by his brother.

JANGLE, n. *jǎng'gl* [OF. *jangler*, to prattle: Dut. *jangelen*, to yelp]: discordant sound; babble: V. to cause to sound discordantly, as in bell-ringing; to quarrel in words; to wrangle. JAN'GLING, imp.: ADJ. babbling; producing discordant sounds, as bells: N. sound of babbling; mere prating; altercation; dispute. JANGLED, pp. *jǎng'gld*. JAN'GLER, n. *-glér*, one who jangles; a chattering noisy fellow.—SYN. of 'jangle, v.': to altercate; bicker; wrangle; rattle; jar; prate.

JANIN, *zhâ-nǎng'*, JULES GABRIEL: 1804, Dec. 24—1874, June; b. St. Étienne, dept. of Loire: French critic. He studied at the college *Louis-le-Grand* in Paris, and addicted himself to journalism at an early period. His wonderful piquancy of style, his airy grace of sentiment and wit, and his dashing paradoxes of criticism, were greatly relished by his countrymen; so much so, indeed, that J., without fear of ridicule, was able to dub himself *le Prince de la Critique*. For many years he made and destroyed literary reputations in the columns of the *Journal des Débates*. He also wrote many novels, tales, narratives of tours, etc., among which were *L'Ane mort et la jeune Femme guillotinée*, *Contes fantastiques*, *Contes nouveaux*, *Voyage de Victor Ogier en Orient*, *Les Catacombs*, *La Bretagne historique*, etc., *Voyage de Paris à la Mer*, and *Les Symphonies de l'Hiver*. He was made a member of the French Acad. 1870. He died in Paris.—J. had great vividness and brilliancy in his manner of saying things to which he had given no consideration. As a critic he was utterly inconsistent through his lack of any general principles of judgment. He was 'prince' only of dashing *improvisatores*: fortunately with his audacious dash he had also amiability. His talents were undeniable, but were devoted to effervescence. One or two of his novels are very remarkable both in substance and in style; but his critical writings have passed quite out of repute.

JANINA—JANIZARY.

JANINA, or **JANNINA**, *yán'nē-ná*, or **JOANNINA** (frequently written as pronounced, **YANINA**): city of Turkey, cap. of a vilayet. It was not ceded to Greece in 1881, though it was in the part of Epirus recommended for cession by the Berlin congress 1878. It is on a lake of the same name, 40 m. inland from the shore opposite the island of Corfu. The extreme length of the lake is about 12 m., greatest breadth about 3 m. At its s. end stood the ancient city Dodona. The city of J. stands in an extensive and fertile plain, which produces fruits and grain in abundance. Its chief buildings are 19 mosques, 6 Greek churches, a Greek college, and two synagogues. Gold brocade is extensively manufactured by Greek workmen, as well as gold lace for the east, morocco, leather, silk goods, and colored linen. J. was long the headquarters of the able but unscrupulous Ali Pasha (q.v.). It is now in part deserted. Pop. 40,000 under Ali Pasha; (1885) est. 20,000, of whom 15,000 are Greeks.

JANITOR, n. *jăn'î-tér* [L. *janitor*, a doorkeeper—from *janŭă*, a gate]: a doorkeeper; a porter.

JANIZARY, n. *jăn'î-zér-î*, or **JANISSARY**, n. *jăn'îs-sér-î* [Turk. *yeni ischeri*, new troops: F. *janissaire*; comp. Pers. *askari*, a soldier]: member of the once formidable infantry of the Turkish empire.—The *Janizaries* were a Turkish military force, originally formed by the Osmanli sultan Orkhan, about 1330, of young Christian prisoners compelled to embrace Mohammedanism; more perfectly organized by Sultan Amurath I., after 1262, when the number was raised to about 10,000, and especial privileges were conferred on them. They were for some time recruited from Christian prisoners; but their privileges soon induced many young Turks to seek admission into their body. There were two classes of Janizaries, one regularly organized, dwelling in barracks in Constantinople and a few other towns, and whose number at one time amounted to 60,000, but was afterward reduced to 25,000; and the other composed of irregular troops, called *Jamaks*, scattered through all the towns of the empire, and numbering 300,000 to 400,000. At the head of the whole J. force was the *Aga* of the Janizaries, whose power was limited only by the danger of revolt, and extended to life and death. The Janizaries were always ready to break into deeds of violence if their pay or perquisites were withheld. In times of peace, they acted as a police force. They served on foot; generally formed the reserve of the Turkish army, and were noted for wild impetuosity of attack. The sultan's body-guard was formed of them. The Janizaries, however, soon began to be very unruly; and their history abounds in conspiracies, assassinations of sultans, viziers, agas, etc., and atrocities of every kind; so that, by degrees, they became more dangerous to the sultans than any foreign enemies. The attempts of the sultans to reform or dissolve them were always unsuccessful, till Sultan Mahmoud II., 1826, being opposed in some of his measures by the Janizaries in Constantinople, displayed the flag

of the Prophet, and succeeded in arousing on his own behalf the fanatical zeal of other portions of his troops. The Janizaries deserted by their aga, and other principal officers who remained faithful to the sultan, were defeated, and their barracks burned, when 8,000 of them perished in the flames. A proclamation 1826, June 17, declared the J. force for ever dissolved. All opposition was defeated with bloodshed. Not fewer than 15,000 were put to death, and more than 20,000 banished.

JANKOVACZ, *yōn-kō-váts'*: town of the Austrian Empire, 81 m. s.s.e. from Pesth. Pop. (1880) 8,625.

JAN MAYEN'S LAND, *yán mī'enz*: island in the Arctic Ocean, named after a Dutch navigator by whom it was discovered 1611. It lies between Iceland and Spitzbergen, and is the northernmost known volcanic land. Its highest point is the volcano, Beerenberg, 6,640 ft., a conical, snow-covered mountain, from which flames and smoke have been seen to proceed, and the sides of which exhibit immense glaciers and frozen waterfalls. Another volcano, called Esk, about 1,500 ft. high, was discovered by Scoresby 1817. An interesting account of the island is in Lord Dufferin's *Letters from High Latitudes*.

JANNEY, *jān'nǎ*, SAMUEL MACPHERSON: 1801, Jan. 11–1880, Apr. 30; b. Loudon co., Va.: author. He was a preacher in the Hicksite branch of the Soc. of Friends, travelled extensively, was appointed by Pres. Grant an Indian supt. 1869, and published: *The Country School-House*, poem (1825); *Conversations on Religious Subjects* (1835, 43); *The Last of the Lenape, and Other Poems* (1839); *The Teacher's Gift*, essays (1840); *An Historical Sketch of the Christian Church during the Middle Ages* (1847); *Life of William Penn* (1852–56); *Life of George Fox* (1853); and *History of the Religious Society of Friends, from its Rise to the Year 1828*, 4 vols. (1860–67.)

JANOW, *yá'now*, MATTHIAS VON: b. probably in Prague, d. there 1394, Nov. 30: reformer. He was descended from a noble Bohemian family, studied theology in the universities of Prague and Paris, visited Rome and was appointed canon of the Cathedral of St. Vitus in Prague and confessor to Charles II. 1381, and was considered the Wycliffe of the Bohemian Church. Though without special oratorical distinction as a preacher, he was a man of great spiritual power, and his writings had remarkable influence on the religious thought of his time. He fearlessly assailed the evils and corruptions of the church, arraigned the conduct of bishops and priests, urged the abolition of all human additions, doctrinal and ceremonial, to Christianity, and pleaded for an immediate return to the simple foundation on which the Apostolic Church rested. His various writings were collected under the title of *De Regulæ Veteris et Novi Testamenti* 1392. The pope on being informed of the character of the principles that he was propagating, declared him guilty of teaching heresies, and 16 years after his death ordered all his writings to be burned with those of Wycliffe.

JANS.

JANS, *jāns* or *yāns* (or JANSEN, *jān'sén* or *yān'sén*), ANNEKE, *ān'nè-kèh*, or ANNETJE, *ān'nèt-yèh*: about 1600-1663, Mar. 19, b. Holland: owner of the King's Farm estate in New York. She came to America with her husband, Roelof Jansen, who was sent out by Patroon Van Rensselaer as asst. steward of his colony at Beaverwyck (now Albany), N. Y., 1630, and the family were subsequently among the earliest Dutch settlers in New Amsterdam (now New York). In 1636 she and her husband obtained from Gov. Van Twiller a grant of 62 acres of land on the w. side of Broadway extending to the North river and from the present Christopher St. to Fulton St. Soon afterward her husband died, and 1638 she married Everardus Bogardus (q.v.), minister of the Dutch Church in New Amsterdam. In 1654, being again a widow, she obtained from Gov. Stuyvesant a patent for this land in her own name, and removed to Beaverwyck, where she died. After her death the grant of land was confirmed to her by the English govt. In 1671 some of her heirs conveyed the whole farm to Gov. Lovelace, and 1705 it was granted by the colonial authorities under Queen Anne to the corporation of Trinity Church, which has since held it. The heirs of the heir who refused to join in the conveyance to Gov. Lovelace brought the first of numerous suits in ejectment 1750, resting a claim on the denial of title in Queen Anne. Other suits were brought 1760, 1807, 30, 34, and 47, all of which were dismissed, and a later and more determined effort for recovery was made 1866-7. Against the oft-repeated charge of the heirs that the church corporation had bought off the leaders in the various suits in ejectment, the court of chancery (Vice-Chancellor Sanford, 1847) has decided that, waiving all other points, the church had acquired a valid title by undisputed possession longer than the time of limitation.

JANSEN.

JANSEN, *jăn'sên*, *D. yân'sên* (or JANSENIUS), CORNELIUS: Bishop of Ypres, author of the celebrated *Augustinus*: 1585, Oct. 28—1638, May 6; b. Akkoi, near Leerdam, Holland; of humble Rom. Cath. parentage; nephew of the well-known biblical commentator, and Bishop of Ghent, of the same name. The earlier studies of J. were divided between Utrecht, Louvain, and Paris. Having obtained a professorship at Bayonne, he applied himself with all his energy to scriptural and patristic studies, especially of the works of St. Augustine. From Bayonne, he returned to Louvain, where, 1617, he obtained the degree doctor, was appointed lecturer on Scripture, and was prominent in the affairs of the university, especially in a contest with the Jesuits, on occasion of which he was sent on a mission to the court of Madrid. In 1630, he was appointed to the professorship of Scripture; and having distinguished himself by a pamphlet on the war with France, *Mars Gallicus*, he was promoted, 1636, to the see of Ypres. In this city he died of the plague, just as he had completed his great work, the *Augustinus*, which proved the occasion of a theological controversy, the most important, in its doctrinal, social, and even political results, which has arisen since the Reformation. Its main object, in which it coincided with the scheme of doctrine already condemned in Bajus (q.v.), was to prove, by an elaborate analysis of St. Augustine's works, that the teaching of this Father against the Pelagians and semi-Pelagians (q.v.), on Grace, Free-will, and Predestination, was directly opposed to the teaching of the modern, and especially of the Jesuit schools (see MOLINA), which latter teaching he held to be identical with that of the semi-Pelagians. In the preface, he submitted the work to the judgment of the Holy See. On its publication 1640, being received with loud clamor, especially by the Jesuits, and at once referred to Rome for judgment, the *Augustinus*—together with the antagonist publications of the Jesuits—was prohibited by a decree of the Inquisition, 1641; in the following year, it was condemned as heretical by Urban VIII. in the bull *In Eminenti*. This bull encountered much opposition in Belgium; and in France, the *Augustinus* found many partisans, who were animated by a double feeling, as well of doctrinal predilection as of antipathy to the alleged laxity of moral teaching in the schools of the Jesuits, with whom the opposition to the *Augustinus* was identified. See JESUITS. The most eminent of the patrons of the *Augustinus* were the celebrated association of scholars and divines who formed the community of PORT ROYAL (q.v.), Arnauld, Nicole, Pascal, etc. Nevertheless the syndic of the Sorbonne extracted from the *Augustinus* seven propositions (subsequently reduced to five) which were condemned as heretical by Innocent X. 1653. Hence arose the celebrated distinction of 'right and of 'fact.' The friends of the *Augustinus*, while they admitted that in point of *right* the five propositions were justly condemned as heretical, yet denied that in point of *fact* these propositions were to be found

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in the *Augustinus*, at least in the sense imputed to them by the bull. A further condemnation was therefore issued by Alexander VII. 1656, which was rigidly enforced in France, and generally accepted; and 1668, peace was partially restored by Clement IX., at least all overt opposition was repressed by the iron rule of Louis XIV. The more rigid Jansenists, however, and at their head Antoine Arnauld, emigrated from France, and formed a kind of community in the Low Countries. On the death of Arnauld, 1684, the controversy remained in abeyance for some years; but it was revived with new acrimony by the well-known dispute on the so-called 'case of conscience,' and still more angrily in the person of the celebrated Quesnel (q.v.). whose *Moral Reflections on the New Testament*, though published with high ecclesiastical authority, at various intervals from 1671 till his death, 1710, was denounced to the pope, Clement XI., as a text-book of undisguised Jansenism. This pope issued, 1713, in the constitution 'Unigenitus,' a condemnation in mass of 101 propositions extracted from the *Moral Reflections*; which, however, met with great resistance in France. The death of Louis XIV. caused relaxation of the repressive measures. The regent, Duke of Orleans, was urged to refer the whole controversy to a national council, and the leaders of the Jansenist party appealed to a general council. The party thus formed, which numbered four bishops and many inferior ecclesiastics, were called, from this circumstance, the Appellants. The firmness of the pope, and a change in the policy of the regent, brought them into disfavour. An edict was published, 1720, June 4, receiving the bull; and even the parliament of Paris submitted to register it, though with a reservation in favor of the liberties of the Gallican Church. The Appellants mostly submitted, the recusants being visited with severe penalties; and on the accession of the new king, Louis XV., the unconditional acceptance of the bull was at length formally accomplished, the parliament being compelled to register it in a *lit de justice*. From this time forward the Appellants were rigorously repressed, and a large number immigrated to the Netherlands, where they formed a community, with Utrecht as a centre. The party still remaining in France persisted in their inveterate opposition to the bull, and many of them fell into great excesses of fanaticism: see CONVULSIONARIES.

In one locality alone, Utrecht and its dependent churches, can the sect be said to have had a regular and permanent organization, which dates partly from the forced emigration of the French Jansenists under Louis XIV., partly from the controversy about Quesnel. The vicar-apostolic, Peter Codde, having been suspended by Clement XI., 1702, the chapter of Utrecht refused to acknowledge the new vicar named in his place, and angrily joined themselves to the Appellant party in France, many of whom found a refuge in Utrecht. At length, 1723, they elected an abp., Cornelius Steenhoven, for whom the form of episcopal consecration was obtained from the

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French bp. Vorlet (titular of Babylon), who had been suspended for Jansenist opinions. A later Jansenist abp. of Utrecht, Meindarts, established Haarlem and Deventer as his suffragan sees; and in 1763, a synod was held, which sent its acts to Rome, in recognition of the primacy (though not the infallibility) of that see, which the church of Utrecht professes to acknowledge. Since that time, the formal succession has been maintained, each bishop, on being appointed, notifying his election to the pope, and craving confirmation. The popes, however, have uniformly rejected all advances, except on the condition of the acceptance of the bull *Unigenitus*, and the recent act of the Holy See, in defining as of Rom. Cath. faith the dogma of the Immaculate Conception of the Blessed Virgin Mary, has been the occasion of a new protest. The Jansenists of the Utrecht Church still number about 6,000, and are divided over 25 parishes in the dioceses of Utrecht and Haarlem. Their clergy are about 30 in number, with a seminary at Amersfoort. The Jansenists abp. of Utrecht has recently consecrated a bishop for the Old Catholic community in Germany: see DÖLLINGER: OLD CATHOLICS.

JANSENISM, n. *jăn'sěn-izm* [from *Jansen*, or *Jansen-iūs*, Bishop of Ypres]: doctrines taught by Jansen regarding free-will and grace. **JAN'SENIST**, n. *-ist*, a follower of. See **JANSEN**, **CORNELIUS**.

JANSSENS, *yâns'sêns* (or **JANSENS**), **VAN NUYSSEN**, **ABRAHAM**: Dutch painter: 1567-1632; b. Antwerp. He studied under Van Snellinck, and 1607 was dean of the master-painters. In his time he was considered inferior only to Rubens as a historical painter. J. is correct in drawing and bold in composition, but is not equal to Rubens in general faculty of color and freedom of touch. Many churches in Flanders possess pictures executed by him; the most famous are the *Burying of Christ* and a *Madonna and Child*, in the church of the Carmelites at Antwerp. There are good specimens of his style also in the galleries of Munich, Vienna, Dresden, and Berlin. The stories of J.'s dissolute life are baseless. He died at Antwerp.

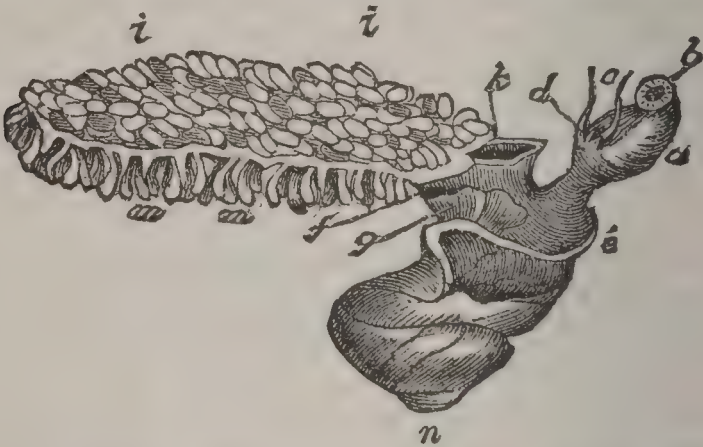
JANSSENS, *yâns'sêns* (or **JANSENS**), **VICTOR HONORIUS**: 1664-1739; b. Brussels: painter. He spent 7 years studying painting with Volders, 4 years in the household of the Duke of Holstein, and 11 years in Rome, where he studied the works of Raphael, selected Albano for his model, became acquainted with Tempesta, in whose landscapes he frequently painted figures, and excelled all his contemporaries in his line. He painted a large collection of figure pieces, gallants and ladies in the costumes of the day, displaying good coloring and rich effects in his dresses and draperies. He remained in Rome 11 years, and on returning to Brussels, painted many large pictures for churches and palaces. In 1718 the emperor invited him to Vienna and made him court painter, but he re-

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turned to Brussels, 1722, and restricted himself to altarpieces till his death.

JANSSENS, CORNELIS (sometimes JOHNSON, CORNELIUS): Dutch painter: abt. 1590–1665; b. Amsterdam. He went to England 1618, and painted many portraits for the king and the court. In 1648 he retired to Holland. J. is distinguished by fine touch, clear color, and careful finish. He painted usually on panel. His style is characterized by a very dark background, throwing into relief the carnations of his portraits.

JANTHINA, *jăn'thîn-a*: genus of gasteropodous mollusks, of the ord. *Scutibranchiata*, of the same family (*Haliotidæ*) with ear-shells. The shell is very similar in form



Common Oceanic Shell (*Janthina fragilis*).

Shell with the animal, the float expanded.

a, head; *b*, mouth; *c*, tentacles; *d*, eyes; *e*, border of the mantle at the entrance of the branchial cavity; *f*, foot, the posterior part, which is flat; *g*, lateral expansion of the mantle, provided for swimming; *h*, foot, anterior part forming a sort of pouch; *i*, *i*, bunch of aerated vesicles, serving to suspend the mollusk at the surface of the water; *m*, *m*, eggs suspended under the vesicular bunch; *n*, shell.

to that of a common snail, but thin and beautifully pellucid. These mollusks are remarkable as inhabitants of the open ocean, in which they swim at the surface of the water by means of a float formed of vesicles containing air, and secreted by the foot. To the under-surface of this float, the egg-capsules are attached. The vesicular float has no more anatomical connection with the animal than the shell has. The *Janthinæ* abound in the seas of warm climates, and are plentiful in the Mediterranean.

JANTU, *n. jăn'tû*: a machine in India for raising water for the irrigation of the land.

JANTY, **JANTILY**, **JANTINESS**: see **JAUNTY**.

JANUARIUS, *jăn-û-â'rî-ûs*, SAINT, or SAN GENNARO: martyr of the Christian faith under Diocletian: b. Benevento, or at least became bishop of that see in the latter part of the 3d. c. According to the Neapolitan tradition, he was taken prisoner at Nola; and the place of his martyrdom, 305, was Pozzuoli, where many Christians suffered the same fate. His body is preserved at Naples, in the crypt of the cathedral, and in a chapel of the same church

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are preserved also the head of the martyr, and two phials (*ampullæ*) supposed to contain his blood. On three festivals each year, the chief of which is the day of the martyrdom, Sep. 19, and on occasions of public danger or calamity, as earthquakes or eruptions, the head and the phials of the blood are carried in solemn procession to the high-altar of the cathedral, of the church of St. Clare, where, after a prayer of greater or less duration, the blood, on the phials being brought into contact with the head, is believed to liquefy, and in this condition is presented for the veneration of the people, or for the conviction of the doubter. It occasionally happens that a considerable time elapses before the liquefaction takes place, and sometimes it altogether fails. The failure is regarded as an omen of the worst import; and on those occasions when the miracle is delayed beyond the ordinary time, great alarm and excitement ensue in the congregation. See many documents in Vol. VI. of the Bollandist *Acta Sanctorum* for September.

JANUA'RIUS, ST., ORDER OF: order of knighthood, founded by King Charles of Sicily (afterward Charles III. of Spain), 1738, July 6; abolished after the French invasion of 1806; reintroduced 1814. The badge is a gold octagonal white and red enamelled cross, with gold lilies in the upper and side angles. The obverse represents St. Januarius in episcopal robes, with an open book. The round middle of the reverse shows a golden open book, and two phials partly filled with blood. The knights are either *Cavalieri di Giustizia*, who must count four noble generations, or *Cavalieri di Grazia*.

JANUARY, n. *jăn'û-âr-î* [L. *Januāriūs*, January—from *Jānūs*, an anc. Roman deity, represented with two faces, looking behind and before, with a key in one hand and a staff in the other]: first month of the year. It was, among the Romans, held sacred to Janus (q.v.), and was added to the calendar with February, by Numa. It was not till the 18th c. that J. was universally adopted by European nations (1752 in Britain legally) as the *first* month of the year, though the Romans reckoned it as such as far back as B.C. 251.—See **CALENDAR**.

JANUS, n. *jā'nus*: one of the most anc. Roman deities. J. with its feminine *Jana*, are—it is supposed—different forms of *Dianus* (probably the Sun) and *Diana* or *Luna* (certainly the Moon). The worship of Janus held a high place in the regards of the Romans. In every undertaking, his name was first invoked, even before that of Jupiter, which is the more singular as Jupiter was unquestionably the greatest of the Roman gods. Perhaps this fact points to the legend that Janus was the oldest of them, and ruled in Italy before any of the others came thither. He presided not only over the beginning of the year, but over the beginning of each month, each day, and the commencement of all enterprises. On New Year's Day people made each other presents of figs, dates, honey-cakes, sweetmeats, etc., wore a holiday-dress, saluted each other kindly, etc. The pious Romans prayed to Janus every morning, whence

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his name of *Matutinus Pater* ('Father of the Morning'). He is represented with a sceptre in his right hand, and a key in his left, sitting on a beaming throne (probably relic of the original, or at least very old worship of Janus as the sun). He has also two faces (whence the expression applied to a deceitful person, 'Janus-faced'), one youthful, and the other aged, the one looking forward, and the other backward, in which some have professed to see a symbol of the wisdom of the god who beholds both the past and future, and others simply of the changing of the year. Numa dedicated to him the covered passage close by the Forum, on the road connecting the Quirinal with the Palatine. This passage (erroneously called a temple, but which was merely a sacred gateway, containing a statue of Janus) was open in times of war, and closed in times of peace. It is a striking commentary on the military habits of the Romans, that the place was shut only thrice in 700 years, first by Numa himself, again at the close of the first Punic war, and for the third time, under Augustus. It was closed also by Vespasian A.D. 71. JANUS-CLOTH, n. a fabric having each side dressed, and different colors on the respective sides. JANUS-FACED, double-faced; double-dealing; deceitful.

JANVIER, *zhong-vē-ā'*, LEVI, D.D. : 1816, Apr. 25—1864, Mar. 25 ; b. Pittsgrove, N. J. : missionary. He was educated at Lafayette and Princeton Colleges and Princeton Theol. Seminary, ordained a minister of the Presb. Church, and assigned to missionary work in India 1841. He settled in Lodonia, n. India, became superintendent of the mission, acquired the Urdu language, translated several religious books and tracts into it, and with Dr. Newton compiled a *Punjaubi Dictionary* (1854). His labors in India were only interrupted by a brief visit to the United States 1859-60. He received the degree D.D. from Lafayette College 1861. He was assassinated by a fanatic Sikh at Ananapoor, India.

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JAPAN, n. *jă-păn'*, or **JAPAN-WORK** [from the country in Asia so called]: work varnished and figured in the manner practiced by the natives of Japan. **JAPAN'**, a varnish for articles made of metal or wood, generally made of linseed-oil, umber, and turpentine: V. to varnish as the natives of Japan do; to cover with varnish or japan. **JAPAN'ING**, imp.: N. the art of giving a black or glossy surface to, and drawing figures on, as on wood. **JAPAN'NED'**, pp. *-pänd'*, made with a black and glossy varnish. **JAPAN'NER**, n. *-nēr*, one who varnishes.

JAPAN, *jă pan'* [corruption of Marco Polo's *Zipangu*; native name, *Dai Nippon* or *Dai Nihon* (fr. *dai*, great; *ni*, sun; *hon*, root or rising), Land of the Rising Sun]: very ancient island-empire of e. Asia, long remarkable for the proud isolating policy of its rulers, and now claiming special consideration, on account both of its recent renewed relations with the civilized world, and of the wonderful changes that during the last few years have been in progress in the country.

Japan Proper comprehends five large islands, viz., Honshiu (mainland), Shikokū, Kiushiu, Taiwan (Formosa), and Yezo, besides Hokoto (the Pescadores, ceded with Taiwan by China 1895), and other islands. The area of the five large islands and the Pescadores 1900 was 161,198 sq. m. The empire also includes nearly 4,000 small islands, among which are the Liu Kiu ('Loo Choo') and Kurile groups, and is bounded n. by the Sea of Okotsk, e. by the N. Pacific Ocean, s. by the eastern Sea of China, w. by the Sea of Japan.

Population.—Pop. (1899, Dec. 31) 47,018,765; males 22,073,896; females 21,689,257; nobles 4,551; gentry 2,105,698; common people 41,650,000. Pop. of Tokio, 1,440,121; Osaka 821,235; Kioto 353,139; Nagoya 244,145; Yokohama 193,762. There were 41 cities with pop. between 30,000 and 100,000; 6,807 foreigners were permanent residents in J.; Chinese 4,071, English 1,200, Americans 621, German 318, French 220, other nationalities 371. In the main seaport, Yokohama, there were 3,837 foreigners, of whom 2,359 were Chinese. The foreign mercantile firms comprised 103 English, 39 American, 42 German, 35 French and 255 Chinese.

Physical Features.—The islands of J. appear to be of volcanic origin, and that part of the Pacific on which they rest is still intensely affected by volcanic action. Earthquakes occur very frequently in J., although certain parts of the country are exempt. J. is one of the most mountainous countries in the world. Its plains and valleys with foliage surpassing in richness that of any other extra-tropical region, its Arcadian hill-slopes and forest-clad heights, its Alpine peaks towering in weird grandeur above deep ravines through which fierce torrents rush, lines of foam-fringed headlands, with a thousand other charms, give it a claim to be considered one of the fairest portions of the earth. The sublime cone of the sacred Fuji-san, erroneously known to foreigners as Fuji-yama ('Matchless Mountain'), an extinct or rather dormant volcano, rises from the

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sea 12,365 ft. Ontaké-san and Yari-ga-také (each 10,000 ft.), Taté-yama (9,500), Yatsu-ga-daké (9,000), Haku-san (8,590), Asama-yama (active volcano, 8,260), with many other scarcely lower peaks, rise in Honshiu. The three other large islands also abound in mountains, though of less elevation. Yezo has no fewer than eight active volcanos. Throughout the empire are many solfataras, and sulphurous springs well up from hundreds of volcanic valleys. The plains, most of the valleys, and many of the lower hills, are highly cultivated; nevertheless, the area of forest is said to be four times as great as that of the cultivated land. Lakes are not very numerous; but there are countless rivers, mostly too impetuous for navigation. The harbors are spacious and deep, but not numerous, considering the great length of the coast-line.

Climate.—The different parts of J. differ widely in climatic conditions. Leaving out the n. and s. extremes, at Tôkiyô (Yedo) we find the annual average temperature to be 57.7° Fahr.; in winter the mercury occasionally falls to 16.2° , and in summer it may rise to 96° : at Nagasaki, the lowest winter temperature is 23.2° : at Hakodaté, the annual extremes are 2° and 84° . The constantly hot weather begins only about the end of June, and terminates usually in the middle of September. Spring and autumn are exceedingly agreeable seasons. The ocean current known as the Kuroshiwo ('Black Stream') considerably modifies the climate of the s.e. coast; thus, while snow seldom lies more than 5 inches deep at Tôkiyô, in the upper valleys of Kaga near the w. coast, less than 1° further n., 18 and 20 ft. of snow are common. The rainfall varies much in different years, but is considerably greater than on the neighboring continent. No month passes without rain; but it is most plentiful in summer, especially at the beginning and the close of the hot seasons, when inundations frequently occur. N. and w. winds prevail in winter, and s. and e. in summer. The violent revolving storms called typhoons are liable to occur in June, July, or September. Thunder-storms are neither common nor violent, and autumn fogs are equally rare.

Vegetable Productions.—In Hodgson's *Japan* is a systematic catalogue of Japanese flora by Sir William Hooker. A few of the most noteworthy trees and plants are the following: Chestnut, oak (both deciduous and evergreen), pine, beech, elm, cherry, dwarf-oak, elder, sycamore, maple, cypress, and many other trees of familiar name. The grandest forests of pine, and oaks of prodigious size, grow in Yezo; but the *Rhus vernicifera* or lacquer-tree, the *Laurus camphora* or camphor-tree, the *Broussonetia papyrifera* or paper-mulberry—the bark and young twigs of which are manufactured by the Japanese into paper—and the *Rhus succedanea* or vegetable waxtree of J., are among the remarkable and characteristic trees. Bamboos, palms, including sago-palms, and 150 species of evergreen trees, likewise flourish. Thus, the vegetation of the tropics is strangely intermingled with that of the temperate or frigid zone; the tree-fern, bamboo, banana, and palm grow side

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by side with the pine, the oak, and the beech, and coniferæ in great variety. The camellia, the Paulownia, and the chrysanthemum are conspicuous among indigenous plants. Nymphæas and Parnassia fill the lakes and morasses. The tobacco-plant, the tea-shrub, the potato, rice, wheat, barley, and maize are cultivated. The flora of J. bears a remarkable resemblance to that of N. America.

Agriculture is the chief occupation of the Japanese. They are very careful farmers, and their farms are models of order and neatness. They bestow great care upon manures, and thoroughly understand cropping and the rotation of crops. The soil is not naturally fertile, being mostly volcanic or derived from igneous rocks, but is made very productive by careful manuring. It grows tea, cotton, rice (the staple production), wheat, maize, buckwheat, millet, potatoes, turnips, beans, peas, etc. The rice harvest commences in October. Wheat is sown in drills in Nov. and Dec., and reaped in May and June. Flails and winnowing-machines, similar to those in w. Europe, are common. In 1894 the grain crop of rice, wheat, barley, and rye aggregated 306,091,130 bushels. The number of cattle (1900) was 1,261,214; horses, 1,541,979.

Animals.—Wild animals scarcely exist in Japan. A few wolves, foxes, and wild boars still roam in the n. of Honshiu. Wild deer are protected by law. The principal domestical animals are horses, of which there is an indigenous race; oxen and cows, used only as beasts of burden; and dogs, held in superstitious veneration by the people. Birds are very numerous, and include two kinds of pheasants, wild-fowl, herons, cranes, and many species common to Europe and Asia. There are few reptiles; and of insects, white ants, winged grasshoppers, and several beautiful varieties of moth are conspicuous.

Mineralogy.—The mineral resources of J. are being developed. In 1903 the official and private mines were worked by foreign methods and machinery. Gold, silver, copper, iron, lead, sulphur, coal, basalt, felspar, greenstones, granites red and gray, rock-crystal, agate, carnelian, amber, scorixæ and pumice-stone, talc, alum, etc., are found in greater or less quantities. Coal-beds extend from Nagasaki to Yezo. The supply of sulphur is almost inexhaustible, and of wonderful purity. But little revenue has yet been derived from the government mines, on account of the necessarily great outlay in the first instance for costly machinery, and the heavy expenses in sinking shafts and constructing furnaces, with other improvements.

Inhabitants.—Ethnologists have referred the Japanese to different types of mankind: Latham classifies them as Turanians; Pickering, as Malays; Prichard, as belonging to the same type as the Chinese; and in the narrative of the U. S. Expedition, they are ranked as a branch of the Tartar family. In Yezo there are about 12,000 Ainos, a hairy race wholly distinct from the Japanese, probably a remnant of the aborigines of Japan. The present Japanese are thought to be a mixed race, the issue of the intermarriage of victorious settlers from the Asiatic continent with Malays

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in the s. and Ainos in the n. Physically the Japanese is distinguished by an oval head and face, rounded frontal bones, a high forehead, narrow and often slightly oblique eyes—the irides of a brown-black color, the eyebrows heavy and arched. The complexion varies from a deep copper color to the fairness of western nations, but is more frequently of light-olive tint. The expression of the face is mild and animated. The Japanese ‘are a people of great qualities and exaggerated defects. They are honest, ingenious, courteous, clean, frugal, animated by a strong love of knowledge, endowed with a wonderful capacity of imitation, with deep self-respect, and with a sentiment of personal honor far beyond what any other race has ever reached.’ On the other hand, they are fickle, revengeful, suspicious, prone to self-conceit, and, especially in the lower classes, deeply tainted with licentiousness. The



The Japanese Ambassadors to Europe in 1862.
(From a photograph by Vernon Heath.)

**1, Takenouchi, Lord of Shimodzūké; 2, Matsudaira, Lord of Inami;
3, Kiyôgokû, Lord of Noto.**

own costume of the Japanese gentleman consists of a loose silk robe extending from the neck to the ankles, but gathered in at the waist, round which is fastened a girdle of brocaded silk. Over this is worn a loose, wide-sleeved jacket or spencer, decorated with the wearer's armorial device. A cylindrical cap made of bamboo and silk, white stockings, and neat straw sandals, complete the attire. European costume has been assumed by the government as the official dress; and though the native costume still prevails among the people generally, such European articles as boots, hats, flannel shirts, etc. are coming more and more into favor as comfortable additions to it. A head entirely shaven is the

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distinctive mark of priests: in others, the hair used to be shaved off about three inches in front, combed up from the back and sides, and glued into a tuft at the top of the head; but the more natural European mode is now fashionable. The hair of the women is more abundant; otherwise their dress resembles that of the men. In the country, a short cotton gown is often the only clothing, and in summer the lower classes go almost in a state of nudity. The women paint and powder their skin, but consider it barbarous to wear such jewels as earrings..

Manners and Customs.—Many of the customs formerly characteristic of J. have, since the abolition of feudalism, 1868, become obsolete. Among these is *seppuku* or *hara-kiri* (i. e., 'belly-cut'), for long a legalized mode of suicide: see HARA-KIRI. Social barriers, lately almost insurmountable, have been broken down, and some of the highest posts are now held by men who have risen from the ranks. The social position of women is more favorable than in most pagan countries. Ladies of the upper class deem it proper to keep themselves in considerable seclusion; but this feeling is becoming somewhat modified. Girls attend the elementary schools as well as boys, and women's colleges have been established under the immediate patronage of Empress Haruku. Polygamy is not allowed, but concubinage is common. Marriages are arranged by the friends of both parties; among the upper classes, the custom of affiancing children prevails. Formerly, when a maiden married, her teeth were blackened and her eyebrows shaven off; this custom is discountenanced by the empress, and is gradually being discarded. Prostitution is very prevalent. It is not uncommon for a dutiful daughter to sell herself for a term of years to the proprietor of a house of ill-fame, in order to retrieve her father's fallen fortunes. When she returns, no stigma attaches to her; rather is she honored for her filial devotion. Licensed houses of ill-fame are now confined to certain districts. Hot baths are a great institution in Japan. Formerly persons of both sexes bathed together; and this primitive custom (in which the simple-minded Japanese sees no impropriety) still prevails in rural districts, though forbidden in the cities. Until lately, the only vehicles in J. were two kinds of palanquin, viz., the *kago*, and the *norimon*; but in all the more level districts, these have now been superseded by the *jin-riki-sha* ('man-power-carriage'), a sort of two-wheeled perambulator drawn by one or two men. Horse-carriages are novel to J., and as yet are rarely seen except in and near the treaty ports. In most of the more mountainous regions, the roads are impracticable even for *jin-riki sha*, and the only means of conveyance are *kago* and pack-horses. The Japanese are essentially a pleasure-loving people. The theatre forms one of their chief attractions. They take great delight in visiting public gardens, and admiring the blossoms of spring or the brilliant tints of autumn. Professional musicians and dancers, principally young women remarkable for personal attractions, are in constant request for parties. The floors of Japanese houses are laid with thick, soft, closely-fitting mats, on which the

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inmates squat, eat, and sleep; these are kept scrupulously clean, the shoes or clogs always being removed on entering. The time of greatest festivity is the New Year, now held contemporaneously with our own. Wrestling, jugglery, and archery are favorite sports; and in the game of *go*, somewhat like our chess, they attain great skill. Great regard is paid to the dead, the ancestral tablet being always placed in the family shrine with the household god. Fish and rice are the staple food of the people, and tea and *saké* (rice-beer) their beverages.

Language.—In J. there are two systems of writing: (1) The ideographic system of Chinese hieroglyphic symbols, which dates from the 3d c.; and (2) the phonetic syllabarium, a modification of this, consisting of 47 characters, and a few supplementary monosyllabic sounds. Prior to either of these, some antique form of writing, now consigned to oblivion, is supposed to have existed.

The phonetic alphabet, invented about A.D. 810, is known as the *Hiragana* form of character. In process of time, this system was rendered more complex by the addition of variations, and this led, apparently, to the introduction of another and simpler alphabet, entirely without variants, and known as the *Katakana* character. Both these phonetic systems are written in perpendicular columns. It is not a little remarkable that the Chinese ideographic symbols retain their ascendancy over the phonetic alphabets, and are adopted almost exclusively for diplomatic documents and the higher class of books.

There is no similarity whatever between the *spoken* languages of China and J.; the latter—one of the softest tongues out of Italy—is not monosyllabic, but agglutinate.

The *literature* of J. is abundant and various, and includes works on history and science, encyclopedias, poetry, prose fiction, and translations of European works. Besides original writings, the Japanese have adopted the whole circle of Chinese Confucian literature; the Chinese classics indeed form the basis of their literature, system of ethics, and type of thought. The present assimilation of western ideas is leading to a proportionate neglect of Chinese philosophy; but as yet there is little or no tendency to discard the cumbrous system of orthography imported from China.

Religions of Japan.—There are two prevailing religions in J.—*Shintô* or *Kami no Michi* ('The way of the gods'), the indigenous faith; and Buddhism, introduced from China A.D. 552—1. *Shintôism*. The characteristics of Shintôism in its pure form are 'the absence of an ethical and doctrinal code, of idol-worship, of priestcraft, and of any teachings concerning a future state; and the deification of heroes, emperors, and great men, together with the worship of certain forces and objects in nature.' The principal divinity is the sun-goddess Amaterasu, from whom the mikado is held to be descended. After the Restoration (1868) the govt. attempted to free Shintôism from the Buddhist innovations which had contaminated it, and to revive it in its pure form as the national religion, but the

effort was unsuccessful. The only public recognition now given it are the services in the imperial palace, and the annual payment by the govt. of about \$300,000 to certain officers and to keep the tombs of the mikado's ancestors and the memorial shrines of patriots in repair. Shintô temples are singularly destitute of ecclesiastical paraphernalia. A metal mirror generally stands on the altar, but even this is a Buddhist innovation. The spirit of the enshrined deity is supposed to be in a case, which is exposed to view only on the day of the deity's annual festival. The worship consists merely in washing the face in a font, striking a bell, throwing a few cash into the money-box, and praying silently for a few seconds; nevertheless, long pilgrimages to famous shrines and to the summits of sacred mountains are often taken to accomplish this. Shintôism is rather an engine of government than a religion; it keeps its hold on the masses chiefly through its being interwoven with reverence for ancestors.—2. *Buddhism*. Of this there were (1888) 11 sects, with 29 subdivisions, having 71,234 temples and shrines, and 73,759 priests. The monks have assumed the functions of priests, and Japanese Buddhist worship presents striking resemblances to that of the Roman Church. The history of the Buddhist monasteries, too, often reads remarkably like that of the corresponding institutions in mediæval Europe. Notwithstanding the increased patronage recently bestowed on Shintôism by the government, Buddhism is still the dominant religion among the people. The most popular, as well as the wealthiest and most enlightened, of the Buddhist denominations, is the *Monto* or *Shinshû* sect, which recognizes one God in Amida Buddha (only, however, an abstract principle personified, not the Living God of Christianity), discountenances asceticism and clerical celibacy, and cultivates preaching, the favorite topic being the duty of self-reliance. It would be a mistake, however, to suppose that a clear line can be drawn between adherents of Buddhism and Shintôism respectively; in the popular mind the two faiths are so blended that the temples of both are frequented without much discrimination. The better educated classes are mostly agnostics, striving more or less to regulate their lives by the maxims of Confucius. Many Japanese temples are magnificent specimens of architecture in wood; they are remarkable for their vast tent-like roofs and their exquisite wood-carving. In the operation of establishing an entirely new form of govt. after the revolution of 1868, a vast number of Buddhist temples were confiscated for public uses, chiefly educational, and the Mikado promised to aim at complete religious toleration. How well he kept his word is attested by the fact that it was decreed 1884, July 11, that thenceforth there should be no official priesthood, and that all religions, Shintôism, Buddhism, and Christianity, should be protected equally, and have a common standing before the law. Under this decree, christianizing influences were more openly and vigorously promoted; and 1888 there were reported 443 Prot. Christian foreign missionaries, 288 church organiza-

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tions, 142 native pastors, 257 unordained native preachers and helpers, 25,514 church members; Rom. Cath. adherents 10,026 (taught by French missionaries); and Greek Catholics 15,542 (taught by Russian missionaries). Nearly all the Prot. missionaries were American and English. There were also reported the building of numerous additional churches, beside orphan asylums, convents, and theol. seminaries, the establishment of Sunday schools, Young Men's Christian Associations, and religious newspapers; and the first consecration in J. of a Rom. Cath. bp., in Yokohama, June 19. There were then in all the empire 191,968 saints' shrines and temples, with 14,849 priests, and 72,039 Buddhist temples, with 56,266 priests.

Government.—The absolutism of the sovereign has been a primary feature of the govt. of J. from time immemorial, though public affairs were administered through a supreme council, consisting of the premier, vice-premier, and heads of the great depts. of state, and subordinate to it through a legislative council under the presidency of an imperial prince, and an assembly of provincial governors. Since the middle ages, the sovereign, when seen by his subjects, sat with folded arms in his palace, his feet never touching the ground, none but a few of the most august nobles being permitted to approach him, and the whole people regarding him as an unusually sacred personage. But since 1868 the govt. has been that of the system that prevailed from the 7th to the 12th c., modified by the adoption of features from the United States and European govts., the drift of affairs has been toward a constitutional monarchy, the old feudal system has been abolished, and the mikado takes an active part in public concerns, and is as approachable as the pres. of the United States. The basis of the reformed govt. is the J. Magna Charta, the 5 declarations made and sworn to by the present mikado, 1868: '(1) We will invite discussion far and wide, and decide all measures according to popular wishes; (2) We will unite the upper and the lower (all classes of people), and ameliorate the nation energetically; (3) We will unite the fountains of honor (the court) and of power (the tycoonate) in one hand, and endeavor to satisfy the wishes of every citizen; (4) We will wipe out the abuses of former times, and conduct all measures according to the rules of heaven and earth; (5) We will seek wisdom and intelligence all over the world, and strengthen the foundation of the empire' For administrative purposes the empire was divided into 3 *fu* or imperial cities, 44 *ken* or prefectures, and 350 *hans*, and there were established to assist the mikado a privy council of 13 members, a cabinet with 8 executive officers, a senate consisting of 60 members (1875), a supreme court of justice with 24 superior judges, and local or prefectural assemblies (1878). 1881, Oct. 12, the mikado further promised to establish a national parliament with limitation of the imperial prerogative; and in order to prepare the material for a house of nobles, issued a rescript 1884, June 6, creating 5 orders of nobility, princes, marquises, counts, viscounts, and barons, the individual selections to be made

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(1) according to the age and standing or the family, and (2) according to the individual's service to the country. The last step in this remarkable transformation of govt. initiated by the sovereign was taken 1889, Feb. 11, when the mikado sanctioned the establishment of a constitutional form of govt. to go into effect 1890, April. 1.

The executive depts. are foreign affairs, imperial household, interior, finance, war, navy, justice, education, agriculture and commerce, and communications. The administration of justice is intrusted to (1) one *Tai-shin-in*, which combines the powers of the U. S. Supreme Court and the French Court of Cassation, and is presided over by one chief justice and an indefinite number of associate justices, (2) four *Jo-to-sai-ban-sho* (courts of appeal), in Tokio, Osaka, Nagasaki, and Fukushima, whose judges visit every province in their respective jurisdictions twice a year, and sitting in the court of *oyer and terminer* with a judge of the provincial court, try capital cases, subject to approval of sentence by the *Tai-shin-in*; (3) *Fu-ken-sai-ban-sho* (provincial courts), in the capital cities of the 30 provinces into which the empire is divided, having jurisdiction over civil and criminal cases, subject to approval of life-sentences by a court of appeal. The dept. of communications comprises the bureaus in charge of light-houses, telegraphs, nautical schools, govt. subsidies to steamship companies, and the foreign and domestic postal service. The scope of the other depts. is indicated by their respective titles.

Finances.—The public debt of J. 1894 was \$316,307,284. The budget estimates for the year 1896 showed a total revenue of \$90,194,658, of which \$38,353,928 were derived from the land tax; \$18,711,281 from the tax on saké; \$7,718,353 from the postal and telegraphic systems; \$5,372,641 from customs; \$3,229,919 from miscellaneous inland revenues; \$3,011,924 from state services; \$2,904,423 from the tobacco tax; \$2,434,330 from various licenses and fees. The estimated expenditure was \$89,275,874, of which \$17,304,492 were for interest and fees on the public debt, \$6,040,083 for reduction of public debt, \$13,251,722 for the ministry of war, \$10,086,184 for defenses, \$5,979,931 for the ministry of finance, \$5,619,562 for the ministry of marine, \$7,706,749 for the ministry of posts and telegraphs, etc.; revenue 1900, \$106,998,000; national debt \$201,110,000.

Army and Navy.—The army has been equipped and disciplined chiefly by a commission of French officers. The peace establishment consists (1893) of 3,615 officers, 65,098 men, 2,181 students, and 10,872 horses; the war establishment comprises 200,729 officers and men, including the *landwehr*, which comprises 106,053 officers and men. The military schools had 2,181 students. The modern and remarkable navy of J. dates its origin from the purchase from the U. S. govt. of the old Confederate cruiser *Stonewall Jackson*, and the offer of the U. S. govt. to J. of the privilege of sending 5 Japanese students to the U. S. Naval Acad. annually. A large number of boys, mostly of noble

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families, were thus educated side by side with American cadets, and on the completion of their 4 years' course were immediately recalled by their govt., and on filing their certificates of graduation at Annapolis were commissioned lieutenants in the imperial navy, and at once started on active careers. In 1893 the J. navy consisted of 4 first-class battle-ships, 8 armored cruisers, 7 protected cruisers, 13 other cruisers, in addition to 15 gunboats, 60 torpedo-boats, and some miscellaneous craft; it was manned by 14,852 officers and men. Of vessels on the stocks there were 2 battle-ships, 2 second-class cruisers, 3 despatch-boats, and 17 torpedo-boats. The *personnel* is trained as in the navies of Europe, and has given excellent proofs of bravery, steadiness, and discipline when under fire, as was demonstrated during the war with China. The total number of the naval reserve is 2,400. In 1888 the govt. appropriated \$2,204,742 for the construction of forts at Tsushima, Shimonoséki, and in Tokio Bay, and the manufacture of heavy guns, torpedoes, and other articles of coast defense. J. now builds her own protected cruisers and is planning battleships.

Education.—The modern system of education was established by imperial decree 1872, and the Rev. Prof. Birdsey Grant Northrop, supt. of education in Conn., was appointed the first superintendent. The whole empire, excepting the island of Yezo, which has a distinct colonial govt., was divided into 8 grand school districts. The cities of Tokio and Osaka, and the 6 provincial capitals, Aichi, Ishikawa, Hiroshima, Nagasaki, Niigata, and Awomori, were designated as the seats for the establishment of universities and other important educational institutions. Each grand school district was divided into 32 middle-school districts, each with a school, and each of these districts was further divided into elementary school districts, each with a school. That educational advantages might not thereafter be confined to the most favored classes as in the past, it was decreed that all children between the ages of 6 and 14 years should be compelled to attend school from 3 to 6 hours per day for at least 32 weeks in each year, and the establishment of 53,760 schools for them was ordered. In 1893 there were 23,960 elementary schools in the empire, with 61,556 instructors and 3,337,560 pupils in attendance. At the head of the educational institutions is the Imperial Univ. of Tokio, comprising a preparatory dept., and special schools of law and jurisprudence, chemical technology, literature, and physics. It had (1893) a teaching staff of 213 professors and instructors, 1,395 students, an extensive library, and a large museum well supplied with apparatus and scientific collections. The Tokio School of Medicine, with 10 foreign and 19 native professors, formed a co-ordinate branch of the university. The Tokio School of Foreign Languages gave instruction in English, French, German, Russian, and Chinese, and the English schools in Tokio, Niigata, Aichi, Osaka, Hiroshima, Nagasaki, and Miyangi had a large attendance. The Tokio school for girls had a curriculum modelled after that

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of the Girls' High School in Boston, with 10 teachers (2 American ladies) and 127 students. Besides these there were 96 private schools of the English language, 4 of French, and 2 of German; the Imperial College of Engineering, connected with the dept. of public works; a law school of the dept. of justice; and 6 private schools where different branches of law, science, and art were taught. The Tokio Normal School had 10 instructors and 430 students, and there was a total of 583 normal teachers and 7,589 students in the empire. More recently a school of telegraphy was established at Tokio and a nautical school for the merchant marine at Osaka. In 1888 a meteorological bureau was opened within the walls of the old castle in the centre of Tokio, with apparatus imported from the United States and Europe, and with 47 stations from which vessels may be warned of approaching typhoons. A standard meridian was officially declared 1888, Jan. 1, and a national system of standard time went into general operation during that year. Public libraries are being established in all the large cities, and graduates of the Univ. of Tokio trained to the western methods of library work. There were 550 news-



A Junk in the Bay of Yeddo, from a native drawing.—Oliphant's *Japan*.

papers in J. (1888), of which 203 were in Tokio, and 43 in Osaka; many of which were devoted specially to the arts and sciences. Beside the government schools, there are schools and colleges established by Christian missionaries of various denominations, which are conducted with remarkable efficiency, giving education of a high grade and greatly esteemed by the natives.

In the *mechanical arts*, the Japanese have long had great excellence, especially in metallurgy, and in the manufacture of porcelain, lacquer ware, and silk fabrics; indeed, in some of these departments works of art are produced, so exquisite in design and execution as to more than rival the best products of Europe. The Japanese have long understood lithocrome-printing. The drawings of animals and figures generally are wonderfully graphic, free, and true to

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nature; but in landscapes they fail, from erroneous perspective; and of the art of painting in oils they were, until lately, entirely ignorant.

Commerce.—In 1901 J. had 3,915 m. of railroad in operation, of which 1,010 m. were govt. property; 29,898 m. of telegraph wire (1902); average annual postal and telegraph receipts about \$6,487,688. Imports were valued at \$141,117. Commercial intercourse with China, suspended during the war, has assumed large proportions. Trade with British India 1901 amounted to \$26,000,000; Great Britain \$31,000,000; Germany \$16,785,586. Of the exports 1902 the United States took \$40,597,582. The ocean commerce was carried in 3,093 foreign vessels of 4,347,211 tons and 1,707 Japanese vessels of 579,967 tons. The United States consumes annually a large part of the tea and more than one-third the silk production of J. The foreign debt 1902 was \$260,000,000. The gold standard was adopted 1897, October.

History.—To understand something of the government and institutions of J., past and present, it is necessary to glance at its history and political landmarks. Here we find an emperor whose dynasty began to reign more than 2,500 years ago, or B.C. 660. Its founder, Jimmu Tennô, was contemporary with Nebuchadnezzar; and in 1868, after twenty five centuries, it threw off the oppression and decrepitude of the last 676 years, and in the person of Mut-sûhito, the present mikado or emperor (the 122d of his race), entered on a new and promising career. The principal landmarks of Japanese political history are briefly as follows: A time of anarchy and faction on the one side, and a succession of feeble sovereigns on the other, enabled Yoritomo, the shôgun or generalissimo (from *Ta-tsiang-kiun*, the Chinese term for 'the great chief or commander of the army')—or tycoon (Chinese *Tai Kun*, i.e., 'Great Lord'), as he is called in recent treaties—to usurp the supreme authority. This occurred 1192; but the creation of a shôgun by the mikado dates from B.C. 85. This high officer was subsequently known to Europeans as the temporal emperor; and to the mikado they assigned purely spiritual functions; but the Japanese themselves recognized one sovereign only, viz., the mikado, who held his court at Kiyôto, or Miyako, while his rival in Yedo acted as real sovereign, at the safe distance of 300 m.; and the Shôgunate became henceforward a permanent institution. It might be said that the shôgun governed, but did not reign; while the mikado reigned but did not govern; though three times a year he received the homage of his all-powerful subject. He even continued nominally the sole temporal emperor, though pensioned by the shôgun and deprived of all real authority. In 1603 the shôgun Tokugawa Iyêyasû (the 'illustrious') organized a government which secured to the empire a peace of 200 years. He founded likewise a permanent succession, and his descendants reigned at Yeddo till 1868. His system was perfected by Iyémitsû, third shôgun of the Tokugawa dynasty. It was his policy 'to preserve unchanged the condition of the native intelligence.'

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'to prevent the introduction of new ideas,' and to effect this he not only banished foreigners, interdicted all intercourse with them, and extirpated Christianity, which had been introduced by the Rom. Cath. missionaries, but introduced that 'most rigid and cunningly devised system of espionage' that was in full activity at the time of the Earl of Elgin's mission, as amusingly described by Mr. Oliphant. 'This espionage,' says a recent Japanese writer, 'held every one in the community in dread and suspicion; not only the most powerful daimio felt its insidious influence, but the meanest retainer was subject to its sway; and the ignoble quality of deception, developing rapidly to a large extent, became at this time a national characteristic. The daimios, who at first enjoyed an honorable position as guests at the court of Yedo, were reduced to vassalage, and their families retained as hostages for the rendition of a biennial ceremonial of homages to the shiogun. Restrictions surrounded personages of this rank until, without special permission, they were not allowed to meet each other alone.' In 1549 St. Francis Xavier introduced the Rom. Cath. religion into J. and the Portuguese (who first landed in J. 1543) carried on lucrative trade; but by-and-by the ruling powers took alarm, ordered away all foreigners, and interdicted Christianity (1624), believing that foreigners impoverished the country, while their religion struck at the root of the political and religious systems of Japan. The converts to that form of Christianity introduced by Xavier, were found to have pledged their allegiance to a foreign power; while their conduct is said to have been offensive toward the Shintô and Buddhist temples; so that in time they came to be regarded as a dangerous and anti-national class whose extirpation was essential to the well-being of the nation, and to the success of the political system then being organized or perfected by Iyémitsû. The Portuguese continued to frequent J. till 1638; when they and their religion were finally expelled. Christianity was suppressed with every cruelty, and at the cost of 50,000 lives; its confessors were murdered, and the ports closed to foreign traffic. From this date the Japanese government maintained the most rigid policy of isolation. No foreign vessels might touch at Japanese ports under any pretense. Japanese sailors wrecked on any foreign shore were with difficulty permitted to return home; while the Dutch, locked up in their factory at Deshima, might hold no communication with the mainland; and the nation lived like frogs in a well, till 1853, when they were rudely awakened from their dream of peace and security by Commodore Perry steaming into the harbor of Yokohama, with a squadron of United States' war-vessels. With a combination of dignity, resoluteness, argument, and promise, he extorted a treaty from the frightened shôgun (1854, Mar. 31), and J., after a withdrawal of 216 years, entered once more the family of nations. Other countries slowly followed the example of the United States; Russia and the Netherlands 1855; the treaty with Great Britain was negotiated 1858; that with France 1859; with Portugal

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1860; with Prussia and the Zollverein 1861; with Switzerland 1864; with Italy 1866; with Denmark 1867. By these the seven ports of Nagasaki, Kanagawa (for this Yokohama has been substituted), Hiyogo (or Kôbe), Yedo (now called Tokiyo), Osaka, Hakodaté, and Niigata were opened to foreign commerce.

It will thus be seen that 'the history of the empire of the Rising Sun is divisible into four distinct periods: the first, which ends with the landing of the Portuguese 1543, is purely local; the second, 1543-1638, includes the story of St. Francis Xavier, the trade with Portugal, the persecutions, and the final expulsion of Europeans; the third, 1638-1854, is distinguished by the Dutch monopoly, and the resolute exclusion of all foreigners; in the fourth, since 1854, J. has once more become accessible to everybody.

The J. of 1854 was a reproduction of Europe of the 12th c.—the feudalism of England under the Plantagenets. An aristocratic caste of a few hundred nobles—the *Daimi-yôs* or territorial princes of J. (278 in number)—ruled large provinces with despotic and almost independent authority; their annual incomes reaching in one or two instances to \$4,000,000. By signing the Perry treaty at all, the shôgun gave deep offense to the daimiyôs, and by signing it without the sanction of the mikado, he committed an act of treason which brought in all the confusion, violence, and disaster of the next few years, and led ultimately in 1868 to the complete overthrow of his own power and the restoration of the mikado to his rightful position as actual ruler of the empire. For long, not a few of the most powerful daimiyôs had been dissatisfied with the shôgun's position, and these gladly availed themselves of the pretext now furnished for opposing him. All possible means were taken to bring him into complications with the ambassadors at his court; and to this motive, rather than to any hatred of foreigners, are to be ascribed the numerous assassinations which darkened the period immediately prior to 1868. Every weakening of his power was a step gained toward his overthrow and the longed-for unification of the empire in the hands of the mikado. At length the shôgun resigned; but it was only after a sharp civil war in the winter of 1867-8 that his power was completely crushed. At the outset of the struggle, the imperial party were decidedly retrogressive in their political ideas; but before its close various circumstances convinced them that without intercourse with foreign nations the greatness which they desired for their country could not be achieved; and when they secured power, they astonished the world by the thoroughness with which they broke loose from the old traditions and entered on a course of enlightened reformation. Recognizing Yedo as really the centre of the nation's life, they resolved to make it the capital; but the name Yedo being distasteful through its associations with the Shôgunate, they renamed the city Tôkîyô, or Tôkei—i.e., Eastern Capital. Here the mikado established his court, abandoning for ever that life of

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seclusion which had surrounded his ancestors with a halo of semi-divinity, but had deprived them of all real power. The venerable city of Kiyôto was at the same time renamed Saikiyô or Saikei—i.e. Western Capital. The daimiyôs resigned their fiefs to the mikado. This has been represented as a grand act of self-sacrifice on their part; but the truth is that the vast majority of them had come to be mere *fainéants*, leaving the government of their territories to the more energetic of their retainers; and it was by the action of a number of the retainers that this, in common with the other changes connected with the Restoration, was affected.

Since 1868, Japan has given several remarkable manifestations of self-consciousness. Her attitude toward Corea; her annexation 1879 of the Liu Kiu Islands, notwithstanding China's remonstrances and threats; her continual protest against the unpalatable extra-territoriality clauses in the treaties, which declare American and European residents amenable to their own, and not to the Japanese, courts of law—prove that she is far from having lost that bold independence of spirit which has always characterized her.—Various parts of J. were visited by destructive floods 1889, Aug. 20 and Sep. 11. The calamities caused by floods in 1889 were officially reported as follows: 12 prefectures devastated, 2,419 people killed, 155 wounded, more than 90,000 deprived of means of subsistence, 50,000 houses swept away or submerged, 150,000 acres of standing crops destroyed, and 6,000 bridges washed away.

In 1891, Oct., J. suffered from a severe earthquake which extended nearly 400 miles. The city of Nagoya, on Hondo Island, was almost entirely destroyed, nearly 50,000 houses being razed to the ground and more than 5,000 persons being among the killed and wounded. In Gifu more than 2,000 persons were killed and one-half of the city was destroyed. At Ogaki, a town of 20,000 inhabitants, 2,000 were killed or wounded. Great damage was done to the shipping, railroads, and telegraph.

In 1894 (Aug. 3) the Japanese, owing to their attitude on the Korean question, became embroiled in a war with China. The former Korean minister to J., Kirn-ok-Kiwn, who in 1884 had attempted to establish a dictatorship over the peninsula, was assassinated at Shanghai (Mar.). Incensed at the murder of its protégé, J. ordered her troops to Corea, but as soon as they landed the Japanese govt. was notified by China and Russia that they must be withdrawn. J. refused to evacuate, and war broke out. It was soon seen that the resources of China in charge of her lethargic commanders were of no avail against the energy and modern training of the Japanese. On both land and sea the forces of the mikado were victorious. After the battle of Ping Yang (1894, Sep. 15, 16) J. was master of Corea, and on Sep. 17 she destroyed almost the entire Chinese navy at the Yalu river. Following up her advantages, J. crossed the Yalu (Oct. 24) and invaded Chinese territory. Her troops met a Chinese force which they drove back and pursued

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to Kiulien-chao. They occupied this point without fighting.

Later this month the second Japanese army under Marshal Oyama landed at Talien-Wan Bay and with the navy jointly attacked Port Arthur (Nov. 21). Fortress after fortress was captured, the infantry carrying them by storm and chasing the Chinese headlong out of their works. The fall of Port Arthur was followed by a victory at Kai-Phing in Manchuria.

At Wei-Hai-Wei (1895, Feb. 12) the remnants of the Chinese navy were captured or destroyed. Defeat after defeat followed the retreating Chinese forces until the road to Peking was almost open to their foes; then, fearing further disasters, they sued for peace and appointed Li Hung-Chang plenipotentiary. He arrived at Simonoseki, Japan, Mar. 19. In the preliminary negotiations China asked for an armistice, which J. was ready to grant if the Chinese would give up the approaches to Peking. This was refused, but in the meantime (Mar. 24) a Japanese fanatic fired at Li Hung-Chang and wounded him in the cheek. Immediately the mikado ordered a three weeks' unconditional armistice, and the culprit was sentenced to penal servitude for life.

In 1895 (April 17) the war was ended by the formal signing of a treaty of peace, the chief provisions of which were that China recognized the independence of Corea; that she conceded to J. permanent sovereignty over the Leao-Tong peninsula (this provision was somewhat modified at the request of Russia); that she engaged to pay two hundred million Kai-Phing taels (about \$142,000,000 in gold) indemnity; and that she ceded the island of Formosa to Japan.

See Kämpfer, *History of Japan* (1727); works by Alcock (1863), L. Oliphant (1850), Mossman (1873), Adams (1874), Arinori Mori (New York 1873), Griffis (New York 1876); the French works of Humbert and Bousquet; Mitford's *Tales of Old Japan*; *Transactions of the Asiatic Society of Japan*; Sir E. J. Reed, *Japan* (1880); Miss Bird (Mrs. Bishop), *Unbeaten Tracks in Japan* (1880); W. G. Dixon, *Land of the Morning* (1882); *Genji Monogatari* (the most famous Japanese romance, Eng. transl. 1882). See also grammars of the written and spoken languages by Hoffmann and by Aston, and the dictionaries by Hepburn, and by Satow and Ishibashi.

JAPANESE, n. *jăp'ăn-ēz*: a native of Japan, or the language. **JAPAN CURRENT**, that branch of the equatorial current of the Pacific which trends northward along the Japan coasts. **JAPAN EARTH**: see under **TERRA**.

JAPAN'NING: art of giving a coating of varnish and other materials to certain manufactures, by which a resemblance is produced to the beautiful lacquered wares of Japan and China. The term is more generally applied in this country to metal-works upon which a dark-colored varnish is applied with heat, but the process is quite as extensively applied to papier-mâché works: See **LACQUERING**.

JAPE—JAPYGIA.

The japanned works of our manufactures are chiefly iron and tin, such as coal-boxes, tin canisters and other articles, which are thereby made more ornamental, and are at the same time protected from rust.

The japanning material consists of anime or copal varnish, alone, or mixed with ivory-black, to produce a black japan; or with asphalt, to produce a dark or light brown, according to the quantity used. For very cheap tinned wares, a single coating is all that is usually given. After being varnished, they are put into a heated oven for a time, after which they are ready for use; but in the case of more valuable articles, such as the handsome coal-boxes of iron now extensively manufactured, and still further ornamented by gilding and painting, several coats of black japan varnish are applied, each being dried in the oven previous to the application of the next, so that a coating of sufficient substance to bear polishing is obtained. Rottenstone and Tripoli powder are used by the polisher, and a beautiful surface is obtained, equal to that of polished jet. The polishing powders are at first applied with leather; but the finishing is done by women, who use only the palms of their hands with small quantities of Tripoli.

The beautiful black surface thus produced is admirably adapted for decoration by gilding, in which much taste is now shown especially by British manufacturers. For the Japanese process, thus imitated on metal, under the name of japanning, see LACQUERING.

JAPE, *v.* *jāp* [AS. *geap*, to deceive: F. *japper*, to yelp—*familiarly*, to chatter]: in *OE.* and *familiar speech*, to mock; to deceive; to lie; to impose on. JA'PING, *imp.* JAPED, *pp.* *jāpt*.

JAPHETH, *jā'fēth*, or JAPHET, *jā'fēt* [Heb. *Yepheth*, apparently derived in Genesis from *pathah*, 'to open,' trop. perhaps 'to stretch forth,' hence supposed to mean 'widely dispersed.' Gesenius and other scholars, however, suggest a derivation from *yaphah*, 'to be fair' or 'beautiful,' in allusion to the fair complexions of the Japhetic or European races]: according to the Hebrew record, second (or as some interpreters say, third) son of Noah, whose descendants peopled first the n. and w. of Asia, after which they proceeded to occupy 'the isles of the Gentiles,' i.e., all the region about the Levant and the Ægean Sea. J. has at a later period, in Talmud and Midrash—not merely from its similarity to the Greek name Iapetus or Japetus, legendary founder of the human race—been used as a typical expression for 'Greek.' Cf. *Meg.* 71, *b.*; *Ber. R.* 40, *b.* etc.

JAPHETIAN, *a.* *jā'fēt'ī-ăn*, or JAPHETIC, *a.* *jā'fēt'ik*: pertaining to the languages of the descendants of *Japheth*, the eldest son of Noah.

JAPURA, *chá-pó'rá*, or CAQUETA, *ká-kā'tá*: river of S. America, tributary of the Amazon. It rises in the Granadian Andes, lat. 1° 26' n., long. 76° 50' w., and joins the Amazon about 65° 50' e. long. Its entire length is more than 1,000 m.; the navigation is impeded by cataracts.

JAPY'GIA, or IAPY'GIA: see APULIA.

JAR—JARGON.

JAR, n. *jâr* [OF. *jare*; F. *jarre*—from Sp. *jarra*; It. *qiara*, a jar—from Ar. *garrah*, a waterpot]: an earthenware pot or vessel of variable shape and dimensions.

JAR, n. *jâr* [Swab. *garren*; Bav. *garrezen*, to creak like a wheel or shoe: Sp. *chirriar*, to creak. L. *garrirē*, to chirp, to chatter: comp. Gael. *dear* = *jâr*, a refusal]: a harsh rattling vibration of sound; harsh vibration or sensation; a quarrel; a clash of interests or opinions: V. to strike or shake with a kind of short rattle; to sound untunably; to strike or sound harshly or discordantly; to clash; to interfere; to quarrel or dispute. JAR'RING, imp.: ADJ. conflicting; disputing: N. a quarrel; a dispute. JARRED, pp. *jârd*. JAR'RINGLY, ad. *-lî*. AJAR, ad. *ă-jâr'*, or ON THE JAR, applied to the state of a door slightly open, when it is capable of producing the jarring sound; open but a little, said of a door.

JAR'CHI: see RASHI.

JARDES, n. *jârdz* [F. *jardons*]: in *far.*, hard callous tumors in horses, a little below the bending of the ham on the outside.

JARDINIÈRE, n. *zhâr-dîn'î-âr* [F. a gardener's wife]: an ornamental stand for plants and flowers, to be used as a piece of decorative furniture in a room.

JARGON, n. *jâr'gôn*, or JARGOON', n. *-gôn'*: a mineral, being a Cingalese variety of zircon, colorless specimens of which are often sold for diamonds.

JARGON, n. *jâr'gôn* [F. *jargon*, gibberish: It. *gergone*; F. *jargonner*, to talk gibberish]: confused, unintelligible talk; gabble; a disparaging term applied to rude and harsh language; applied to the peculiar phraseology of a party, etc. *Note.*—JARGON may be connected with Gael. *iarr*, to beg, *cainnt*, speech—thus denoting the canting, droning language of beggars. See Dr. Charles Mackay. JARGONIZING, *jâr-gôn-îz'ing*, phenomena observed chiefly in acute mania; it consists in the utterance of uncouth and unintelligible sounds, which may resemble articulate words, or be little more than harsh ejaculations and bellowings. This symptom must not be confounded with those imitations of foreign tongues or provincial idioms, or the perversions of the faculty of language characteristic of mania and other forms of alienation, as the sounds in Jargonizing are not intended to be, nor to appear, the vehicles of thought or manifestations of feeling. They stand in the same relation to the excitement and violence, as the rapid motion, the furious gesticulation, and the tendency to injure and destroy everything that is seemly and harmonious. The tone in which they are uttered is generally harsh and defiant, because intense passion thrills through every muscle, through those of the vocal apparatus as well as of the arm raised to strike. Jargonizing is, in all probability, involuntary. It occurs at the commencement or crisis of mania, when the power to control the ideas and to regulate motion is most impaired. It may, however, be the

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result of volition, so far as that the individual desires and determines to speak, but fails from the rapidity or intensity of his emotions to call into action, and co-ordinate the organs engaged in articulation. Such utterances may be heard in soliloquy, if the phrase may be used, and during sleep. The feature has been accepted as pathognomic of mania. It has, however, been noticed in the delirium of certain stages of fever and of drunkenness, which are mental stages depending upon blood-poisons. During periods of profound abstraction, similar sounds are said to have proceeded from the lips of sane and healthy men. In all these instances the natural operation of the will appears to be enfeebled or suspended.

JARGONELLE, n. *jâr'gõn-ël* [F. *jargonnette*—from *jargon*, a yellow diamond, a small stone]: a rich variety of pear very stony.

JARNAC, *zhâr-nâk'*, **BATTLE OF**: at the town of Jarnac, dept. of Charente, France, 1569, Mar. 13, between 20,000 Rom. Catholics under the Duke of Anjou, afterward Henri III., and 15,000 Huguenots under Louis, Prince of Condé, together with Coligny. The latter were completely routed. See **CONDÉ**.

JAROSLAV, *yâ'rô-sláv*: capital of the govt. of J., in European Russia; large and fine town, on the right banks of the Volga, and its affluent the Kotorosl; lat. 57° 37' n., long. 39° 53' e.; 164 m. from Moscow. It is one of the most ancient Russian towns, and is said to have been founded by Jaroslaw the Great, 10th c. During the feudal period, it was the seat of powerful feudal princes, and several times suffered from the invasions of the Mongols. The town has a vast *gostinoidvor*, or market-place, nearly as lively as that of Moscow, and a quay on the Volga, about 2 m. long. Though possessing large stores of linen fabrics, flax, iron, flour, and grain, J. is but a second-rate commercial place on the Volga, the principal trade being concentrated at Rybinsk, 54 miles up the river, and at Rostof. Chemical works, principally of white lead and minium, constitute a sort of specialty of the town and its staple industry; next come several tanneries, extensive flour-mills on the Kotorosl, and a recently built cotton-mill of 40,000 spindles. The celebrated silk, and especially linen and damask factories, are at present on the decline. The population of J. is increasing with the wealth of the town, owing to the development of steam-navigation on the Volga and the Kama. J. has a law college, founded 1805. Pop. (1880) 30,300; (1885) 34,799; (1897) 70,610.

JAROSLAV, **GOVERNMENT OF**: one of the central provinces of European Russia; about 14,000 sq. m. The soil is generally not fertile, it hardly supplies the wants of the inhabitants, and compels industry; so that the province furnishes nearly all Russia with the best carpenters, masons, smiths, etc. The staple industry is dressing, spinning, and weaving flax, which occupies more than 25,000 hands, mostly near Jaroslav, Uglich, and Venkoe-Seio. In the

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n. districts of Mologa and Poshekhonje the whole population of many villages manufacture nails, springs, and other hardware. The inhabitants of the Rostof district have the reputation of being the best kitchen-gardeners and fowl-breeders of the empire. The Volga crosses the govt. from w. to e., and gives special impulse to its industry. The inhabitants are remarkably handsome in form and feature. The govt. is div. into nine districts. Pop. (1880) 1,052,000; (1887) 1,126,891; (1897) 1,072,478.

JARRED, JARRING: see under JAR.

JARROW-, *jār'rō* (or YARROW-, *yār'rō*) ON-TYNE-, *ōn-tîn*: town of Durham, England, on the s. bank of the Tyne river, 3 m. s.w. of S. Shields, 7 m. s.e. of Newcastle, 240 m. n.n.w. of London. It has extensive ship-building yards, iron foundries, and manufactories of paper and chemicals, and in its immediate neighborhood are several great coal mines. The new Tyne docks erected on Jarrow Slake with quays and adjacencies cover 300 acres, of which 50 are water surface with a tidal basin of 10 acres. These docks have greatly increased the trade of J. Of coal alone 4,000,000 tons were shipped thence in a single year. The parish church of St. Paul retains some fragments of the Saxon edifice founded about 685, and is said to contain the oak chair and relics of the Venerable Bede (q.v.). Ruins of the monastery begun by Biscop 681 and consecrated 685 are found close by. Other buildings of note are the various chapels, mechanics' institute, and the hospital. J. was a local board district prior to 1875, and was then constituted a municipal borough. Pop. (1901) 34,294.

JARVES, *jār'vès*, JAMES JACKSON: 1818, Aug. 20—1888, June 28; b. Boston: author. A weakness of the eyes prevented his entering Harvard College, for which he had prepared, and led him to extensive foreign travel. After visiting Cal., Mexico, Central America, S. America, and various Pacific islands, he settled in Honolulu 1838, established *The Polynesian*, the first newspaper published in Hawaii, 1840; was made director of the govt. press and his newspaper the official organ of the govt. 1844; was appointed special commissioner of Hawaii to negotiate treaties with the United States, France, and Great Britain, 1849; and after concluding this business, made his residence alternately in Rome and Florence, and began forming a gallery of old masters illustrating the history of Italian art. He was elected honorary member of the *Acad. delle Belle Arti* in Florence, was U. S. vice-consul and acting consul in Florence 1879-82, and commissioner of Italy for the Boston exhibition 1882-3. His collection of old masters became the prop. of Yale Univ., a second of old masters and antique sculpture went to the Holenden gallery in Cleveland, and his collection of antique and modern Venetian glass was given by him to the Metropolitan Museum of Art, New York. His numerous publications include *A History of the Hawaiian or Sandwich Islands* (1843); *Scenes and Scenery in the Sandwich Islands* (1844); *Parisian Sights and French*

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Principles seen through American Spectacles, 2 vols. (1853); *Art Hints, Architecture, Sculpture, and Painting* (1855); *Kiana, a Tradition of Hawaii* (1855); *Italian Sights and Papal Principles seen through American Spectacles* (1855); *Confessions of an Inquirer*, 3 parts (1857-69); *Art Studies: The Old Masters of Italy* (1861); *The Art Idea, Sculpture, Architecture, and Painting in America* (1866); *Art Thoughts: The Experiences and Observations of an American Amateur in Europe* (1869); *Glimpses at the Art of Japan* (1876); and *Italian Rambles* (1884).

JARVIS, *jār'vīs*, ABRAHAM. D.D.: 1739, May 5—1813, May 3; b. Norwalk, Conn.: bishop of the Prot. Episc. Church. He graduated at Yale College 1761, was ordained deacon and priest in London 1764, became rector of Christ Church, Middletown, Conn., the same year, declined a first election as bp. to succeed Bp. Seabury 1796, accepted the second and was consecrated 1797, and was settled in New Haven from 1803 till death.—His son, SAMUEL FARMER J., D.D., LL.D.: 1786, Jan. 10—1851, Mar. 26; b. Middletown, Conn., graduated at Yale College 1805, was ordained priest in the Prot. Episc. Church 1810, became prof. of biblical criticism in the Gen. Theol. Seminary 1819, rector of St. Paul's Church, Boston 1820, prof. of Oriental literature in Trinity College, Hartford 1835, and historiographer to the Prot. Episc. Church 1838. He received the degree D.D. from the Univ. of Penn. 1819, and LL.D. from Trinity College 1837.

JARVIS, JOHN WESLEY: 1780—1840, Jan. 12; b. S. Shields, England: painter. He was named after his uncle the celebrated Methodist, was brought to Philadelphia by his father when 5 years old, educated himself, wanted to study painting but was discouraged by Stuart, removed to New York and became an engraver, and first exhibited his art talent in executing profiles on glass in black and gold leaf. From this he began painting miniatures, and afterward portraits in oil. He made a thorough study of anatomy, and after his fame was established painted with great rapidity and showed a genius for indicating the characteristic traits of his subjects. At different times he lived in New York, Baltimore, Richmond, Charleston, and New Orleans. He was a brilliant raconteur and exceedingly popular. Among his portraits are those of Hull, Perry, Bainbridge, Swift, Brown, McDonough (in the New York city hall), Randolph, Morris, Tompkins, Benson (in the New York Hist. Soc.), Clinton, Bp. Moore, and Fitz-Greene Halleck.

JASEY, n. *jā'zī* [corruption of *Jersey*, and probably so called from being made of or resembling Jersey yarn]: a wig; a head of bushy hair.

JASHER, *jā'sher*, BOOK OF [Heb. *Sepher ha-yashar*, 'the Book of the Upright'; rendered by the LXX. *Biblion tou Euthous*, and by the Vulgate, *Liber Justorum*; but the Peshito (Syriac version) has *Sepher Hashir*, 'Book of Praises or Hymns']: one of the lost books of the ancient Hebrews; quoted in the Bible twice (Josh. x. 13 || Sam.

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i. 18). Regarding its character and contents, there has been much speculation. Talmudic and later Jewish authorities identified it variously with Genesis (sometimes called 'the Book of the Upright'), Deuteronomy, Judges, etc., to all which notions there is the fatal and obvious objection that the two quotations from it which survive are not found in any of these books, and refer to incidents later in the national history. The conjecture of the Syriac and Arabic translators has been adopted by Lowth, Herder, and other scholars, viz., that the Book of J. was a collection of national ballads—a Hebrew minstrelsy, in short—recording the warlike deeds of the national heroes, or singing the praises of otherwise celebrated men. Gesenius is inclined to the same view, and suggests that it may have acquired its name, 'the Book of the Upright,' from having been written chiefly in praise of upright men. Donaldson, in an ingenious work, *Jashar, or Fragmenta Archetypi, Carminum Hebraicorum in Masorethico Veteris Testamenti Textu passim tessellata*, contends for its being a composition of the age of Solomon, and a work of Nathan and Gad. He conceives that it originated in the desire of the more religious of the community to possess a record of the national history which should chiefly set forth the righteousness of the true Hebrews, and he attempts to extract from the so-called canonical books of the Old Testament such passages as he believed to have originally formed part of it. It must be added, however, that Dr. Donaldson's theory has met with little favor either from the mass of German scholars or from the few in England who are competent to consider the question.—several pretended books of J. have been put forth. Three were written in Hebrew, and published, 1394, 1544, 1625. A fourth, purporting to be an English translation, was written by an infidel printer at Bristol, Eng., secretly printed, and published 1751.

JASMIN, *zhâs-măng'*, JACQUES: 1798, Mar. 6—1864, Oct. 4; b. Agen: most eminent modern patois poet of France, and in the words of his ardent admirers, 'the last of the troubadours.' He has given in his *Soubenis* a humorous account of his early life. According to it, he was of very humble birth, and was set to learn the trade of a hair-dresser, which agreed well with that of poet, as he himself says, because both are a kind of head-work. His poetry is full of beauty and power; the pathos of his serious, and the wit of his comic pieces, are unequalled, and both have been received with enthusiasm in France, and other parts of Europe. His most admired pieces all are written in the Agen patois, a picturesque and melodious dialect, spoken by the illiterate and rustic, which he partly remodelled as a literary medium. He used to recite his pieces in public. He was made a chevalier of the Legion of Honor 1846. J.'s principal works are *Me cal Mouri* (1825); *Lou Chalibari* (The Charivari, 1825), a comic poem; *L'Abuglo de Castel-Cuille* (The Blind Youth of Castel-Cuille, 1836), translated by Longfellow; and *Las Papillotos de Jasmin* (The Curls of Jasmin), of which the first part appeared 1835, and the second 1843. He died at his native town.

JASMINE—JASPER.

JASMINE, n. *jäs'mĭn*, also spelled **JESSAMINE**, n. *jës'sä-mĭn* [F. *jasmĭn*; Sp. *jazmĭn*—from Ar. *yasmin*], (*Jasminum*): genus of plants of nat. ord. *Jasminaceæ*. This order is allied to *Oleaceæ*, and contains about 100 species of shrubs, some of them climbing, and many of them having exquisitely fragrant flowers. They are natives chiefly of warm parts of Asia. Many belong to the genus *J.*, which has its calyx and corolla each 5 or 8-cleft, two stamens attached to and included within the tube of the corolla, and a two-lobed berry, one of the lobes generally abortive. The **COMMON J.** (*J. officinale*) is a native of s. Asia, but now naturalized in s. Europe, and as far n. as the Tyrol and Switzerland. In more northern regions, it is much cultivated in gardens, but does not easily endure severe winters. It is a shrub six to ten ft. high, with evergreen pinnate leaves, the terminal leaflet the largest, and very fragrant white flowers. The flowers were formerly employed in medicine, for strengthening the nervous system, but are now used only for preparing *Oil of Jasmine*, a delicious perfume. The commercial oil of *J.*, however, is not the pure essential oil, but merely oil of ben flavored with it, and is prepared by placing layers of the flowers alternately with layers of cotton soaked in oil of ben.—*J. grandiflorum*, native of the E. Indies, has flowers still more fragrant, from which, and from those of *J. Sambac* also, oil of *J.* is made. The flowers of *J. Sambac* are often scattered about in houses and temples in the E. Indies, to diffuse their fragrance: florists have several varieties of it.—Several other species, some with erect, some with twining stems, are common in gardens and green-houses: some have white and some have yellow flowers. A very fine species is *J. grandiflorum* or **Catalonian J.** (in Europe, **Malabar J.**). *J. nudiflorum* has yellow odorless flowers, which bloom only in spring: it is a hardy species.—Oil of *J.* cannot be obtained from *J.* flowers by distillation.

JAS'MINE, **CAPE**; or **CAPE JES'SAMINE**: 'tropical and subtropical shrub-plant of the genus *Gardenia*, family *Rubiaceæ*. It is neither related to the true jasmine nor a native of the Cape of Good Hope, the best known species, *Gardenia florida*, having been found originally in China, whence it was taken to England 1754. Under cultivation it yields large white and fragrant flowers, and oblong orange-colored berries, which the Chinese and Japanese use in making yellow silk dye. In England and the United States it is cultivated as a bedding-plant, in hot-houses, and in some localities in the open air, and is popular for garden and cemetery ornamentation.

JAS'MINE, **CAROLINA**; or **YELLOW JES'SAMINE**: see **GELSEMIUM**.

JA'SON: see **ARGONAUTS**.

JASP, n. *jäsp*: **OE.** for **JASPER**.

JASPER, n. *jäs'per* [OF. *jaspre*; F. *jaspe*; It. *jaspide*—from L. and Gr. *iaspĭs*]: mineral generally regarded as one of the varieties of Quartz (q.v.), and distinguished by its opacity, owing to a mixture of clay or other substances

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with the silica of which it is chiefly composed. There are many kinds of J., some of them of one color, as brown, red, yellow, green, white, blue or black; some variously striped, spotted, or clouded with different colors. J., though counted among precious stones, is a very abundant mineral; it is found in veins and embedded masses in many rocks, sometimes appears as a rock of which whole hills are formed, and is very common in the shape of pebbles. It has been prized from the most ancient times for ornamental purposes, as it takes a high polish. Many kinds of it are very beautiful; and it can often be obtained in pieces of large size, so that it has been much used not only for rings, seals, and other small articles, but for the decoration of palaces. One of the best known kinds of J. is found in Egypt, *Egyptian Jasper*: it is generally yellow, prettily mixed with brown. Possibly the ancients classed as J. some stones which now are called chalcedony and agate, while our J. was known to them as *achates*. The original J. appear to have been green.—J. with very distinct stripes is called *Ribbon Jasper*.—The kind called *Porcelain Jasper* is rather rare: it is often full of minute holes, or is cracked in all directions, and is regarded as a kind of natural porcelain, formed by the action of fire. JASPID'EAN, a. -*píd'ě-ăn*, also JASPID'EUS, a. -*e-űs*, like jasper; consisting of jasper. JAS'PERY, a. -*pěr-ű*, having the character of jasper.

JASPER, *jăs'pěr*, WILLIAM: about 1750–1779, Oct. 9; b. S. C.: soldier. At the beginning of the Revolutionary war he enlisted in the 2d S. C. regt., was soon afterward promoted sergt., and in the attack on Fort Moultrie by a British fleet 1776, June 28, distinguished himself by leaping out through an embrasure at the height of the bombardment, recovering the flag that had been shot from its staff, tying it to a sponge-staff, and standing with it on the ramparts until another staff was erected for it. Gov. Rutledge rewarded him for his heroism by presenting him with his own sword, and offered him a lieutenant's commission, which he declined through inability to read or write. He was employed on picket and outpost duty, made a number of daring raids into the enemy's country, and was mortally wounded while attempting to fasten the colors, presented by Mrs. Elliott to his regt., on the parapet of Spring Hill redoubt during D'Estaing and Lincoln's attack on that place in the assault on Savannah 1779, Oct. 9. A public square in Savannah and a co. in Ga. are named after him, and a monument commemorating his daring feat has been erected in Savannah.

JASSY, *yăs'sě*, or JASSII, or JASCHI: capital of Moldavia, the n. division of Rumania; picturesquely situated on the slope of the Kopoberg Mountains, near the borders of Besarabia, about ten m. w. of the Pruth. It is irregularly built and dirty, and in its crooked streets the palatial mansion of the Bojar—the Moldavian noble—alternates with huts and hovels. It contains about 90 ecclesiastical edifices, one of which dates from the 14th c. On a height is the Prince's Court, formerly the residence of the gov. of Mol-

JASZBERENY—JAUER.

davia. The streets are covered with dust in summer and with mud in winter, on which account, conveyances are in great requisition, and every one except the Jew and the mendicant employs a drosky. In J., there are 1,300 private carriages, 5,000 droskies, and 12,000 horses. The manufactures of the town are few; there is considerable trade in agricultural produce. Pop. (1900) 78,067, of whom many are Jews, Greeks, Armenians and Germans.

JASZBERENY, *yáss-bā-rāñ'*: considerable town of Hungary, in the county of Jasygia and Kumania, on both banks of the Zagyva, 42 m. e. of Pesth. The people are employed in agriculture and in the trade in corn, cattle, and horses. Pop. (1880) 21,507; (1890) 24,300.

JĀTAKA [literally, 'relating to birth']: with the Buddhists, the name of a work or a series of books containing an account of 550 previous births of Sâkya Muni, or the Buddha. Several tales that pass under the name of Æsop's fables are found in this collection of legends.

JATIVA, *chá'tē-vā* (or **XATIVA**), **SAN FELIPE DE**: town of Spain, province of Valencia, 22 m. s. of the city of that name. Its climate is delicious, and the well-watered plain on which it stands is luxuriant in fruits and flowers. Its trade and manufactures are unimportant. Pop. 14,000.

JĀTS, *jāts*, or **JAUTS**, *jauts*: race of people inhabiting chiefly the n.w. portion of India between the Indus and the Ganges rivers, though also widely spread through Sind, Baluchistan and the N.W. Provinces; estimated to comprise two-fifths the entire population of the Punjab and half that of the Rajput states; and regarded by various ethnologists as descendants of the first Aryan settlers in the valley of the Indus, of the ancient Getæ, Dacians, Huns, Avars, Yuechi, and other lost tribes, and as progenitors of the gypsies. They are tall, extremely dark, well formed, quite nomadic in habit, ferocious in war, and expert agriculturists and stock-breeders. Those settled on the Ganges and Jamna are divided into two great clans, while those in the Punjab comprise more than 100 tribes. In religion they generally accept the belief of their locality, and the whole race is about evenly divided between Mohammedan, Brahman, and Sikh doctrines. Their language is a variety of Sindhi, and is a pure Sanskrit tongue, exhibiting unusually early grammatical forms. The J., with a tribe called Meds, comprised the bulk of the population of Sind at the time of the Mohammedan conquest, A.D. 712. They served in Mohammed Kasim's army, vigorously resisted the Arab invaders, were overthrown by Amran 836, invaded Mansura 1025, sustained memorable sieges at Bhartpur, 1805 and 26, and were subdued by the British in the latter year.

JAUER, *yow'ér*: interesting old town in Silesia, Prussia, on the Neisse, 10 m. s.s.e. of Liegnitz. The town is famous for its sausages; and there is a weekly grain-market, regularly held since 1404, and the most important in Silesia. J. was formerly very prosperous, being the only market

JAUJA—JAUNDICE.

for the linen-trade of Silesia; but the Thirty Years' War reduced its extent and prosperity. Pop. (1885) 11,178.

JAUJA, *chow'chá*: town, cap. of the province of Jauja, dept. of Junin, Peru; on the e. bank of the Jauja river, 108 m. e. by n. of Lima. It is one of the most ancient towns in Peru, was cap. of the country under the Spanish viceroyalty till 1535, is beautifully located, and contains several churches and schools, cavalry barracks, the missionary convent of Ocapa, ruins of ancient Indian castles, and weaving factories. There are rich silver mines in its vicinity. Pop. about 15,000.

JAULNA, *jarol'na*: town of India, Nizam's dominions, in a rugged country, 38 m. e. of Aurungabad. It has a fort and cantonment for British troops. On the opposite bank is the old town of J., now much decayed. Pop. 10,000.

JAUMANGE, n. *zhō-mǎngzh'* [F. *jaune*, yellow; *manger*, meat]: a variety of blancmange; Dutch flummery.

JAUNCING, n. *jawn'sing*: in *OE.*, for *jaunting*, pleasure-seeking.

JAUNDICE, n. *ján'dis* [F. *jaunisse*, the yellow disease—from F. *jaune*; OF. *jalne*, yellow—from L. *galbīnus* or *galbānus*, greenish-yellow]: a disease of the liver characterized by yellowness of the skin and of the conjunctiva of the eye, and general languor. **JAUN'DICED**, a *-dist*, affected with jaundice; prejudiced; biassed. **JAUNDICED EYE**, an eye which sees faults and blemishes which do not exist.—*Jaundice* arises from the presence of the coloring matter of the bile in the blood and tissues, and is a symptom of various disordered conditions of the system, rather than a special disease.

With this coloring of the skin and eyes the following symptoms are associated: the feces are of grayish or dirty-white tint, in consequence of the absence of bile, and the urine is of the color of saffron, or is even as dark as porter, in consequence of the presence of the coloring matter of the bile. There is sometimes, but not in the majority of cases, an extreme itching of the skin. It is a popular belief, as old as the time of Lucretius—

Lurida præterea fiunt quæcunque tuentur arquati—

that to a jaundiced eye everything appears yellow. This, however, like the preceding, is only an occasional symptom.

The most obvious cause of jaundice is some obstruction in the gall-ducts, preventing the normal flow of bile into the intestine. This obstruction may arise in any of the following ways: 1. It may be caused by the impaction of a gall-stone in the common hepatic duct: see **LIVER**. In this case, the jaundice is usually of short duration, and disappears soon after the gall-stone has passed into the intestine. 2. Another cause of jaundice is the obstruction of the gall-ducts by cancerous disease of the head of the pancreas, by tumors in the liver, or by a diseased condition of the duodenum, the portion of small intestine into

JAUNT—JAUNTY.

which the common hepatic duct opens. In these cases, the obstruction is usually permanent, and causes a persistence of the jaundice. 3. Obstruction or closure of the gall-ducts sometimes occurs in the inflammation of the liver that is brought on by spirit-drinking, and sometimes may be caused by inflammation originating in the ducts themselves, which, from their small size, may be readily closed up by inflammatory swelling of their mucous membrane. 4. The jaundice that occasionally arises from constipation, or that occurs during the advanced stage of pregnancy, is probably caused by pressure upon the common hepatic duct.

But though jaundice is frequently caused by some of these mechanical impediments to the flow of bile into the intestine, it results primarily and solely in a great number of cases from the secretion of bile being suppressed or deficient. The secretion may be suppressed so as to cause jaundice by a sudden mental shock or by continued anxiety. Various poisons in the blood may also suspend the secretion of bile to such an extent as to cause jaundice. It may be produced in this way by the salts of copper and of mercury, by opium, and by the poison of serpents; and it often occurs, from the poisoned state of the blood, in the course of fevers, especially the virulent fevers of tropical climates.

The prognosis in jaundice is generally favorable, except when it depends on structural disease of the liver, or on mental shock or anxiety. The treatment must be guided chiefly by reference to the conditions which give rise to it in any particular case, and should never be attempted without professional advice.—*Malignant Jaundice* is a name sometimes given to a very fatal disease, acute yellow atrophy of the liver.

JAUNT, n. *jánt* [OF. *jancer*, to stir, as a horse in the stable till he sweat: Manx, *jonse*, a jolt, the acting in a wild untamed manner: OE. *jaunce*, to jolt as rough-riders are wont to do]: a stirring or rambling about; a short journey; a trip: V. to journey; to wander here and there; to take short trips. JAUNT'ING, imp.: N. a rambling for pleasure or exercise: ADJ. used for short journeys, as a *jaunting* car. JAUNT'ED, pp.—SYN. of 'jaunt, n.': excursion; tour; ramble; journey; flight.

JAUNTY, a. *ján'tǐ* [F. *gentil*, pretty, agreeable]: airy; showy; gay. JAUN'TINESS, n. airiness; showiness; flutter. JAUN'TILY, ad. *-lǐ*, gayly. *Note*.—JAUNTY is perhaps from JAUNT, meaning 'to wander idly and airily about.'

JAVA.

JAVA, *já'va* (Djawa): 'the Queen of the Eastern Archipelago,' a most valuable colonial possession of the Netherlands, lat. $5^{\circ} 2' - 8^{\circ} 50' \text{ s.}$, and long. $105^{\circ} 12' - 114^{\circ} 39' \text{ e.}$ It is washed on the n. by the Sea of Java, e. by the Strait of Bali, s. by the Indian Ocean, w. by the Strait of Sunda. The extreme length from e. to w. is 666 m., the breadth varies from 56 to 136 m; area 50,260 sq. m. The island is mountainous, and cut in many parts by deep gorges and rushing streams. The mountains rise to a height of 4,000 to 12,000 ft., and are clothed to their summits with luxuriant foliage. Of the lofty mountains, 46 are volcanoes, of which 16 are active. Dreadful eruptions took place, 1772 and 1822. The small volcanic island of Krakatoa, in the Strait of Sunda, between J. and Sumatra, was 1883 the scene of a stupendous volcanic convulsion which submerged some parts of the adjoining land and created new islands. The accompanying earthquake wave destroyed Anjer in J., and various places in Sumatra, and flooding the coasts, caused the loss of tens of thousands of human lives.

Pop. of J. includ. Madura (1888) 20,898,122, of whom 30,700 were Europeans or their descendants, 228,340 Chinese, 11,665 Arabs, and 20,614,222 natives: (1900) 28,745,698. The Javan. belong to the Malay (q.v.) race; in moral habits and civilization they are superior to the inhabitants of Sumatra and Celebes. Entire religious liberty is granted by the govt. to members of all religious confessions. The Ref. Church had (1893) 35 ministers and 31 assistants, the Rom. Cath. 23 curates and 24 priests; Christians among the natives and other orientals 16,730; missionaries of various denominations 103. The majority of the natives of the interior are made acquainted neither with the Christian religion nor with European education. Though Mohammedanism is nominally the religion of J., the great mass of the Javanese are believers in the primitive animism of their ancestors.

The island is divided into E., W., and Middle Java, containing 23 subdivisions, called Residencies, over which a superior European official, the Resident, exercises general control, and acts as judge, collector, and magistrate. The Resident has European assistants, who perform the same functions in districts of the residency; and native agency is extensively employed also in the govt. service. Indeed, all the chiefs are either present or expectant salaried servants of the colonial govt., actually engaged, under European superintendence, in ruling the people. The chief native official of a district is the Regent, selected from the family of the former local prince. The superior administrative and executive power is in the hands of a gov gen., who is also gov. of the Dutch E. Indies.

The following are details as to the several residencies or governmental divisions of the island:

Djokjokarta and Surakarta are called the Vorstenlanden (Lands of the Princes), the former having a native sultan, the latter an emperor, vassals of the Dutch. Begalen

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is one of the most fertile residencies, and produces coffee, indigo, tea, cinnamon, rice, tobacco, sugar, maize, cotton, cocoa-nuts, and great variety of fruits. Banjoemaas is very mountainous toward the n. and n.e. Banjoewangi, in the e. of the island, is mountainous, well wooded, and fertile. Bantam, a residency in the west corner of J., is low and marshy on the n. coast. Toward the interior, it gradually becomes mountainous, with beautiful valleys between the heights. The soil is generally fertile, producing the usual crops of the island. Bantam, former capital of the powerful kingdom of that name, is now little more than a village. Bezooki, on the e. coast, is mountainous, and clothed with a luxuriant vegetation. Buitenzorg, an assistant-residency, is very healthful, and often has a favorable influence on the sick from other districts of J., especially of Batavia, to which it is contiguous. Buitenzorg, the capital, is 883 ft. above sea-level, and is one of the most pleasant places in the island. Cheribon is a very extensive and beautiful residency, and, like most of the others, derives its name from that of its capital. Djokjokarta produces the usual crops. The natives are much addicted to the use of opium. The capital city is large, and regularly built. It is the seat of the sultan, the resident, and assistant-resident. Pop. 50,000. Japara, on the n. coast, has a very warm climate in the interior. Kadoo—i.e., hollow—is a large basin formed by lofty mountains, some peaks being over 10,000 ft. high. It is one of the smallest residences of J., but densely peopled. Its fertility is increased by the abundance of water flowing from the surrounding mountains. Kediri consists of a plain bounded by mountains on the n., e., and west. The navigable river Brantas affords great trading facilities. Pasoeroewan, washed by the Strait of Madura, has important fisheries, and is famed for its race of horses. The Preanger Regencies are partly occupied with mountains, forming two chains: between these are many extensive valleys of the richest soil. There are many rivers, of which five are navigable. Probolinggo produces much sugar and coffee.

Rembang produces the usual crops. The n. parts are dry and sandy; and in the s. are extensive forests, abounding in teak and other valuable timber trees. Rembang, the capital, has a small Prot. church and schools.

See SAMARANG: SURABAYA: and SURAKARTA.

Tagal is very fertile. It is washed on the n. by the Java Sea, and the fisheries are important. In the s. of the residency is the volcano Slamet, 11,320 ft. high. Tagal, the capital, is a small but neatly built town, with considerable coasting-trade.

The material prosperity of J. is owing in great measure to the energy with which the Dutch govt. has extended the growth and manufacture of those articles which form its staple exports. An elaborate 'culture-system' was introduced 1830, by which a certain proportion of their land and the gratuitous labor of one day in seven were exigible from the natives for the growth of govt. crops, especially coffee. As this system was rigidly and skilfully carried

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out, the staples for exportation grew rapidly, and what had been a burdensome colony became for the Netherlands a mine of wealth. Even since 1856, this most oppressive scheme of *exploitation*, the 'culture system,' has been in course of gradual relaxation. By a law passed in 1870 the forced cultivation of sugar was totally abolished in 1890. At present (1903) the forced labor of the natives can be required only for the production of coffee, which is sold by the govt. partly in the colonies, but mostly in the Netherlands. The severity of the forced labor system led to serious outbreaks requiring the presence of troops and involving the loss of many lives 1884 and '88. The situation was so threatening in 1888 that the Netherlands govt. found it expedient to remit the sugar export duty for 5 years, abolish govt. rents, and defer for 5 years the payment of half the interest then due the govt.

The greater part of the island is still uncultivated. Rice is grown extensively for native consumption; the production of sugar (1891) was 1,082,923,733 lbs.; of cinchona (1893) about 95,000 lbs.; tobacco 26,000,000 lbs.; tea 8,000,000 lbs.; indigo 1,370,000 lbs.; coffee (in Dutch East Indies) 47,854,265 lbs.; there is also a considerable production of maize, cotton, and other plants. A large proportion of the products of the island is the property of the government, and is managed, stored, shipped (exclusively in Dutch ships), and sold in Holland by the Netherlands Trading Company, whose profits arise from the commission allowed on the transactions. The import and export duties are very high, but much modified in favor of the Netherlands. The Javanese are much addicted to smoking opium, which the government does not permit to be grown on the island. But it imports the quantity considered necessary, and grants licenses for its sale, realizing therefrom an annual revenue, which, 1893, amounted to \$7,850,000.

The following statistics are for the entire Dutch East Indies or Dutch India (see NETHERLANDS—*Colonies*), of which J. is the most important. The revenue for 1896 was \$52,615,866, and the expenditure \$54,930,248. The local revenue is derived from land, taxes on houses and estates, from licenses, customs duties, personal imposts, the govt. monopolies of salt and opium, railways, and a number of indirect taxes; one main source of revenue is the sale of govt. coffee, grown under the 'culture system' and sold in India and Europe. The receipts in the Netherlands from the sale of govt. coffee (1896) were \$5,379,032. Tin-mining (chiefly at Banca and Billiton) is also a source of revenue.

The army (1893) numbered 1,358 officers and 33,273 subordinate officers and soldiers, of whom 13,883 were Europeans. The navy comprised 26 ships, manned by 2,763 Europeans and 1,156 natives.

Chief Towns.—Batavia (see BATAVIA), cap. (pop. 1900, 115,887), Surabaya (146,944), and Samarang (89,286). There were (1893) 902 m. of rail. on the island.

Climate.—With the exception of some marshy dists. on the n. coast, the climate of J. is healthful and pleasant.

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On the coasts the thermometer seldom indicates more than 93° F. during the dry, and 84° in the rainy season. The average is 80° at noon, and 70° in the evening. The heat is moderated by the sea breezes, which constantly blow across the island. Along the high lands of the interior the air is not only breezy, but sometimes cold, the thermometer frequently falling to 45°; and as the entire island is intersected with excellent roads, it is not difficult to reach the most beautiful and salubrious districts. Inland of Samarang, at an elevation of 4,000 ft., Europeans find a pleasant retreat during the dry season.

Language.—The languages spoken in J. are two, Javanese and Sunda, having some words in common, but showing essential differences. Of these two, the Javanese is the superior. Both have alphabets utterly unlike the various Hindu alphabets, and bear marks of originality, as though invented by the people themselves. There are various foreign elements, such as Sanskrit, Arabic, Telugu; of these Sanskrit is predominant. The Javanese has been a written language from very early times, and has a considerable literature, generally metrical and with a peculiar rhythm. There are three dialects of it—vulgar, polite, and ancient or recondite.

History.—The history of J., previous to the 14th c., is involved in fable and obscurity. It appears, however, that the Javanese, from a very early period, possessed considerable civilization, probably the result of the labors of Brahmanical teachers from Hindustan. It is impossible to say precisely when Hindu civilization and religion were introduced into J., though it must have been very early in the Christian era. Buddhism was superadded; and there are many old Buddhist temples scattered throughout the island, memorials of the former prevalence of that religion. The most famous is that called Boro Buddor (q.v.). Toward the close of the 14th c., Mohammedanism found a footing in the e. provinces; and 1475, the Hindu empire was overthrown; and Mohammedanism became the faith of the country, yet as late as 1511, when first the Portuguese visited J., they found a Hindu king in Bantam. In 1595, the Dutch sent out an expedition under Houtman, who, on arriving at Bantam, found the king at war with the Portuguese, and offered him assistance, obtaining in return permission to build a factory. In 1677, after many contests with the native princes, the Dutch obtained extensive territories and important trading concessions. In 1811, when Holland became incorporated with France, the British took possession of J., which, after 5 years' occupation, was restored to the Dutch. A long and bloody war ended in the whole island becoming virtually a Dutch province 1830, though two states are still nominally ruled by native princes. Slavery was abolished in the island 1860.—See Sir Stamford Raffles's *History of Java* (1817); Crawford's *Eastern Archipelago*; Money's *Java*; Wallace's *Malay Archipelago*; and the great work on Java by Prof. Veth of Leyden (3 vols. 1875-80). See NETHERLANDS TRADING COMPANY.

JAVEL—JAY.

JAVEL, n. *jäv'ěl* [unascertained]: in *OE.* and *Scot.*, a worthless fellow; a dirty wanderer.

JAVELIN, n. *jäv'lîn* [*F. javeline*, a javelin—from *It. giavelina*; *Sp. jabalina*, a boar-spear—from *jabali*, a wild boar: *Ir. gafa*, a hook; *gabhla*, a spear]: short light spear used for darting against an enemy. In the Roman legion, the first and second lines (the *Hastati* and the *Principes*) were armed with two javelins to each man. Each *J.* (*Lat. pilum*) was in all about 6½ ft. in length; the shaft 4½ ft. long, of tough wood, an inch in diameter; and the remainder given to the barbed pyramidal head. In action, the legionary hurled one *J.* on the enemy at the first onset; the second he retained as a defense against cavalry. The Goths and other barbarians used javelins. **JAVELIN-MEN** in England, attendants on the sheriffs and judges at assizes.

JAWHOLE, n. *jäv'höl* [*F. gachis*, splashing: *Ger. gauche*, slops: *Scot. jaw*, to dash, to spirt; *jaw*, a wave]: a gully-hole; sink where slops are thrown.

JAWOROW, *yá-vō'rōv*: town of the Austrian Empire, province of E. Galicia, 28 m. n.w. from Lemberg. on the Krakowska, affluent of the San, which itself is a branch of the Vistula. Close by the town is a lake, abounding in fish. *J.* is in the form of a square, and has extensive suburbs. It has mineral springs. Near it are large paper-mills. Many of the inhabitants are Jews. Pop. (1890) 9,219.

JAWS, n. plu. *jawz* [*F. joue*, the cheek: *Wall. chawer*; *OE. chaff*, to chirp, to chatter: *O. Dut. kouwe*, the cavity of the mouth—from *kouwen*, to chew: *Dut. kauwe*, a chattering daw, a jaw: comp. *OE. chaff-bones*, or *chaw-bones*]: the bones of the head in which the teeth are fixed, consisting of an upper and a lower *jaw*, in man of a horse-shoe shape; the mouth; in *slang*, *jaw* is simply 'speech, or offensive irritating talk'; the inner ends of the booms or gaffs of a ship hollowed in. **JAW**, v. in *slang*, to talk noisily to, or in an irritating, offensive manner. **JAWING**, imp. **JAWED**, *jawd*: **ADJ.** having jaws; having the character of a jaw or jaws. **JAW'-FALLEN**, depressed; dejected; depressed in spirits. **JAW'-BONE**, n. the bone of the jaw containing the teeth; in *slang*, credit. **JAW'-BREAKER**, a word difficult to pronounce.

JAXAR'TES: see **SYR-DARIA**.

JAY, n. *jā* [*OF. jay* or *gay*; *F. geai*; *Sp. gaio*; *Dut. kauwe*, a jay, a daw—so called from its *gay* colors: comp. *Sp. gayar*, to garnish with variegated trimming], (*Gar-rulus*): genius of the Crow family (*Corvidæ*), differing from magpies chiefly in the rather shorter bill, and in the shorter and rounded, sometimes almost even tail. They are inhabitants of forests and wooded districts, chiefly in temperate parts of Europe, Asia and N. America; and feed more on fruits and seeds than crows and magpies generally do; but they have the omnivorous character of the rest of the family, and often rob the nests of other birds, whether containing

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eggs or young.—The COMMON J. (*G. glandarius*) is a well-known native of England and of the south and middle of Scotland, though far less common than formerly in consequence of the incessant war waged against it, by gamekeepers and by the legislature itself; an English statute of the 17th year of George II. having empowered grand juries to offer three-pence for the head of each jay, on account of alleged injury done to young trees. It is rather smaller than a jackdaw; the plumage is mostly ash-gray, finely tinged with red or purple, the quill-feathers and tail mostly black, a beautiful mottled patch on each wing rayed with bright blue, a broad mustache-like stripe of black extending for an inch from the base of the lower mandible on each side; the head is furnished with a crest of erectile feathers, each of which has a streak of black in the middle. Jays are most



Common Jay (*Garrulus glandarius*).

frequently seen solitary or in pairs. They build in thick trees or bushes, and their nest is a basket-like structure of small sticks, lined with fine roots and grasses; the eggs, five or six in number, are yellowish-white, minutely and thickly speckled with light brown. When taken young, the J. is very easily tamed, becomes very familiar and amusing and excels in its power of imitating voices and sounds.—The BLUE J. (*G. cristatus*) of N. America, a species abundant from the Gulf of Mexico to Canada, is smaller than the Common J.; it has a similar crest or tuft on the head, and a longer and more rounded tail. The general color of the upper parts is bright purplish-blue; the wings and tail white, barred with black; the neck surrounded with a curved black collar. It is more gregarious than the Common J., and partially migratory.—The CANADA J., or CARRION BIRD (*G. Canadensis*), is a more northern American species.—Other very beautiful species are found in the n.w. of America, in Mexico, and the Himalaya Mountains.

JAY, JOHN, LL.D.: 1745, Dec. 12—1829 May 17; b. New York: statesman. He graduated at King's (now

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Columbia) College 1764, was admitted to the bar 1768, became a member of the New York committee of correspondence and proposed a congress of delegates from all the colonies 1774, May, was a member of this congress, held in Philadelphia Sep. 5, and wrote the 'address to the people of Great Britain' adopted Oct., was a member of the second congress and author of the 'address to the people of Canada' adopted 1775, May, was a member of the committee of correspondence with 'European friends of American liberty,' member of the provincial congress of New York and author of the constitution of 1777, chief-justice of N. Y. 1777-78, member and pres. of the continental congress 1778, minister to Spain 1779-83, colleague with Franklin and Adams in negotiating peace with Great Britain 1782, and sec. of foreign affairs 1784-9. His personal influence and articles in *The Federalist* (q.v.) did much to secure the adhesion of N. Y. to the federal constitution 1788, and in the following year Washington appointed him the first chief-justice of the United States. In 1794 he was appointed a special envoy to Great Britain and negotiated with Lord Granville what is known as 'Jay's Treaty,' the ratification of which by the American senate in spite of great opposition averted another war with Great Britain. He was elected gov. of N. Y. before his return, was re-elected 1798, declined reappointment tendered by Pres. Adams as chief-justice of the U. S. supreme court 1801, and spent the remainder of his life on his estate at Bedford, Westchester co., N. Y. In 1785 he was pres. of a soc. in New York organized to promote the emancipation of slaves, and the abolition of slavery in the state was accomplished 1799 largely through his exertions. He was an active member of the Prot. Episc. Church; and his last office was the presidency of the American Bible Society. He received the degree LL.D. from Harvard College while U. S. chief-justice,

JAY, JOHN: diplomatist: b. New York, 1817, June 23; son of William J. He graduated at Columbia College 1836, was admitted to the bar 1839, was sec. of the Irish relief committee 1847, counsel for many fugitive slaves before the civil war, organized the meetings (1854) that led to the formation of the republican party 1855, was U. S. minister to Austria 1869-75, and republican member and pres. of the N. Y. civil service commission 1883. He has been corresponding sec. of the N. Y. Hist. Soc., pres. of the Union League Club 1866-70 and 77, first pres. of the Huguenot Soc. 1885, and an active member of the American Geographical and Statistical Soc., and of the Prot. Episc. Church. His published works include: *The Dignity of the Abolition Cause, as Compared with the Political Schemes of the Day* (1839), *Caste and Slavery in the American Church* (1843), *The Proxy Bill and the Tract Society* (1859), *The American Church and the American Slave Trade* (1860), *The Great Conspiracy and England's Neutrality* (1861), *America Free, or America Slave*, and *The Memories of the Past* (1867). He d. 1894, May 5.

JAY—JAZYGES.

JAY, WILLIAM: 1769, May 6—1853, Dec. 27; b. Tisbury, Wiltshire: English Congregational minister, of much celebrity for pulpit eloquence, and as a voluminous writer of devotional, practical, and other religious works. His father was a stone-cutter and mason, and young Jay's first employment was that of mason's boy; but while young he was sent to Marlborough Acad., an institution of the Congregationalists for training young men for the ministry. According to the custom of Congregationalists in England, he was sent out to preach in country villages almost in his boyhood—preaching his first regular sermon in his 17th year, and preaching nearly a thousand times before he was 21. After a humble pastorate near Chippenham, he officiated for a year in a chapel at Clifton; and 1791, was unanimously called to the pastorate of the church in Argyle Chapel, Bath, which position he occupied 62 years. He retired from it 1853, Jan., and died in the same year, at the age of 84. His style in the pulpit was very practical and direct, and sometimes lacked refinement, but was always impressive. J's published works, in general, attained a rapid and very extensive popularity. Among them are *Sermons*, *Family Prayers*, *Morning and Evening Exercises*, *Mornings with Jesus*, an *Essay on Marriage*, *Memoirs of the Rev. Cornelius Winter*, *Memoirs of the Rev. John Clark*, *Lectures on Female Scripture Characters*, and an *Autobiography*. A collected ed. of his works, 12 vols., revised by himself, was published 1841, but is incomplete, as some of his works were of more recent date.

JAY, WILLIAM, LL.D.: lawyer: 1789, June 16—1858, Oct. 14; b. New York; second son of JOHN J. He graduated at Yale College 1808, studied law in Albany, assisted Elias Boudinot in organizing the American Bible Soc. 1810, was appointed judge of the court of common pleas of Westchester co., 1818, was the first judge in the co. under the new constitution 1821–43, an early and persistent anti-slavery advocate, and author of numerous publications including *Life and Writings of John Jay* (1833), *An Inquiry into the Character and Tendency of the American Colonization and American Anti-Slavery Societies* (1834), *A View of the Action of the Federal Government in Behalf of Slavery* (1837), *War and Peace: the Evils of the First, with a Plan for Securing the Last* (1848), *Causes and Consequences of the Mexican War* (1849), and *An Address to the Non-Slaveholders of the South, on the Social and Political Evils of Slavery* (1849). He left a manuscript *Commentary on the Bible*.

JAYADEVA *jī-a-dā'va*: Hindu poet, who, according to some, lived about the middle of the 11th, according to others, about the middle of the 16th c. His great work is the *Gītāgovinda*, an erotic poem in honor of Krishna an incarnation of Vishnu, and of his wife *Rādhā*, interpreted in a literal and mystical sense.

JAZYGES, *jāz'ē-jēz*: ancient tribe near the shores of the Black Sea and the Sea of Azov, dispersed by the invading Magyars, but reappearing in Hungary, where they estab-

JEALOUS—JEDBURGH.

lished a colony under the name Jazygia, now a part of the Palatinate. See SARMATIANS.

JEALOUS, a. *jěl'ūs* [F. *jaloux*, jealous—from OF. *jalous*—from mid. L. *zēlōsus*, jealous—from L. *zēlūs*; Gr. *zēlōs*, zeal, jealousy]: suspicious of rivalry; suspicious of not enjoying the affection or love of another; anxiously careful and concerned for anything; in *OE.*, careful; fearful; vigilant. **JEAL'OUSNESS**, n. *-nēs*, or **JEAL'OUSY**, n. *-ūs-ī*, the uneasiness which arises from the fear of another robbing us of the love or affection of one whom we love; suspicious caution, vigilance, or rivalry; earnest concern or solicitude. **JEAL'OUSLY**, ad. *-ī*. *Note.*—**JEALOUS** may be connected with Gael. *dileas* = *jēlyas*, loyal, faithful—for the *jealous* one is supposed to be loyal and faithful, on the supposition that 'there is no love without *jealousy*.' See Dr. C. Mackay. —**SYN.** of 'jealous': suspicious; envious; anxious; vigilant; solicitous; apprehensive; uneasy; invidious; emulous.

JEAN, n. *jān* [F. *jean*—from *Genoa*]: a kind of stout cotton cloth. **SATIN-JEAN**, a stout cotton cloth woven to have the smooth glossy surface of satin, used for stays, shoes, etc. **JEANNETTE**, n. *jān-nēt*, a fabric closely resembling jean, but not so close in texture, and coarser.

JEANNETTE' EXPEDI'TION: see **POLAR EXPEDITIONS**.

JEARS, n. plu. *jērz*: in *nav.*, an assemblage of tackles by which the lower yards of a ship are hoisted or lowered: also written **GEERS**, or **JEERS**.

JEBB, *jēb*, Sir **JOSHUA**: 1793–1863, June 26; b. Walton, Derbyshire, England: prison reformer. He was educated at the Royal Military College and at Woolwich; entered the Royal Engineers 1812; served in Canada, the United States, and the W. Indies; entered civil employment 1838; was appointed surveyor-gen. of prisons and inspector-gen. of military prisons, and chairman of the board of directors of convict prisons 1848: was created a K.C.B. in the civil division and promoted maj.gen. 1859. His early efforts in behalf of prison reform were to improve the condition of convicts through a reduction of their terms of imprisonment for good behavior. He was the founder and promoter of the ticket-of-leave system; and in the Pentonville prison, built according to his improved plans 1840, he inaugurated the separate or solitary confinement system. He published several works on penal laws and prison discipline.

JEDBURGH, *jēd'būr-rūh*: old town, and royal and parliamentary burgh of Scotland, cap. of the county of Roxburgh, beautifully situated on the left bank of the Jed, 14 m. e.s.e. of Selkirk, 40 m. s.e. of Edinburgh. J. has been greatly improved in recent years by many fine new buildings. The most interesting architectural feature of the town is the remains of the magnificent abbey of Austin Canons, founded by King David I. about 1130. Of this structure, the church (230 ft. long) alone remains. The abbey was rifled and burned 1523 by the Earl of Surrey, and again by the Earl of Hertford 1544. To preserve it from threatened

JEDDAH—JEFFERISITE.

ruin, the abbey, a few years ago, was extensively repaired, with judicious regard to its ancient architectural features. The present jail occupies the site of a castle in which Malcolm the Maiden died, and William the Lion, Alexander II., and other Scottish kings frequently resided. The principal manufactures of J. are blankets, flannels, shawls, plaids, and hosiery. Pop. (1871) 3,321; (1881) 3,400.

J. appears in record as early as the 9th c. Between 829 and 854, Ecgred, Bp. of Lindisfarne, whose diocese then extended to the n. of the Tweed, built two towns here; one now represented by the hamlet of Old J.; the other by the town of J., which was made a royal burgh in the reign of David I. Situated on the border, its inhabitants were a war-like race, whose slogan, 'Jeddart's here!' was seldom long silent. Their chief weapon was the 'Jeddart axe,' or 'Jeddart staff,' a stout pole four ft. long, with a steel head.

JED'DAH: see JIDDAH.

JED'DO, or JED'o, or YED'o: see TOKIO.

JEE, *jē*: cry to a horse; same as GEE, which see. A-JEE, in *Scot.*, to one side; awry.

JEEJEE'BHOY: see JEJEEBHOY.

JEER, v. *jēr* [Ger. *scheeren*, to rail at, to jest; Icel. *dar*, derision; *dara*, to make sport of: a corruption of the Ger. phrase *den-gek-scheeren*, to shear the fool]: to deride; to scoff; to make a mock of: N. a'taunt; mockery; derision. JEER'ING, imp.: N. mockery: ADJ. having the character of a jeer. JEERED, pp. *jērd*. JEER'ER, n. *-ēr*, one who jeers. JEER'INGLY, ad. *-lī*.—SYN. of 'jeer, v.': to sneer; gibe; flout; mock; taunt.

JEFFERISITE, n. *jěf'ér-īs-īt* [after W. W. *Jefferis*]: a mica-like mineral, which exfoliates remarkably when heated to 300°; composition essentially a hydrated silicate of alumina, iron, and magnesia; occurring in veins in serpentine at Westchester, Penn.

JEFFERSON: city, cap. of Mo.: see JEFFERSON CITY.

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JEFFERSON, *jěf'fēr-son*: city, cap. of Marion co., Tex.; on Big Cyprus Bayou and the Texas and Pacific railroad; 4 m. n.w. of Soda Lake, 40 m. n.w. of Shreveport, 162 m. e. of Dallas, 260 m. n.e. of Austin. It is connected by the bayou and lake with Red river, is the largest city in n.e. Tex., has large deposits of coal and iron ore in its vicinity, and is the shipping point for a great extent of fertile country, chiefly to New Orleans. Its commerce comprises cotton (average annual shipment since the civil war 275,000 bales), cattle, beef, hides, tallow, wool, and osage-orange seeds; and its manufactures iron, lumber, bricks, leather, and minor articles. It was settled 1843, and contains 7 churches, Rom. Cath. female acad., 1 national bank (cap. \$50,000), 1 state bank (cap. \$26,000), and daily and weekly newspapers. Pop. (1870) 4,190; (1880) 3,260; (1890) 3,072; (1900) 2,850.

JEFFERSON, JOSEPH: b. Philadelphia, Penn., 1829, Feb. 20: actor. He is descended from a long line of actors, made his first appearance on the stage in Washington as the child in *Pizarro* when three years old, played in his father's small theatre in Chicago when he was 10, removed with the family to Mobile where his father died, joined a party of strolling players in Tex. 1843, and travelled through the state till the opening of the Mexican war, followed the American army under General Taylor's protection and played in the conquered towns as far as Matamoras where all civilians were ordered from the army, and from the close of the war till 1856 was employed playing and managing in New York, Philadelphia, Baltimore, Washington, Richmond, Wilmington, and Savannah. In 1856 he rested a while in Europe, and declined a farce engagement at Drury Lane Theatre, London; then played in the n. and e. American cities till the beginning of the civil war; fulfilled engagements in Cal. and Australia till 1865, when he made a second trip to London; and produced Boucicault's version of *Rip Van Winkle* for the first time Sep. 4. He returned to the United States 1866, and has since been constantly before the public with his most popular *Rip Van Winkle*, *Bob Acres*, *Golightly*, *Sir Hugh de Brass*, *Caleb Plummer*, *Dr. Pangloss*, *Newman Noggs*, and *Dr. Ollapod*. 1889, Oct. 14, he began a season in New York with William J. Florence and Mrs. John Drew as *Bob Acres* in *The Rivals*. He spends his leisure in summer on his farm at Hohokus, N. J., and in winter on his sugar-plantation on Bayou Teche, La., and is an ardent sportsman and an accomplished landscape painter.

JEFFERSON, THOMAS, LL.D.: third pres. of the United States; 1743, Apr. 2—1826, July 4; b. Shadwell, Albemarle co., Va.; third child and eldest son of Peter J., a wheat and tobacco planter, well-educated, and widely known for his great physical strength and his skill as a mathematician and surveyor; and of Jane, daughter of Isham Randolph and granddaughter of William Randolph, the Va. colonist. J. was descended from a Welsh family that settled in Va. prior to 1619, one of whose members was a delegate to the

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house of burgesses—the first legislative assembly ever convened in British America—which met at Jamestown 1619, June 29. His early education was personally directed by his father and supplemented by a collegiate preparatory course. When he was 14 years old his father died, leaving a death-bed injunction that Thomas should complete his studies in William and Mary College. He accordingly entered the college 1760, graduated 1762, began studying law with George Wythe 1763, and was admitted to the bar 1767. During the next 8 years he applied himself closely to his profession, in which he was remarkably successful; took the full management of his father's estate; was chosen justice of the peace and vestryman in succession to his father; increased the family estate from 1,900 to 5,000 acres; married Martha Skelton, widowed daughter of John Wayles (1772, Jan. 1), whose property doubled his estate; was chosen to represent his co. in the house of burgesses (1769), where he signed the non-importation agreement and introduced a bill authorizing owners of slaves to set them free if they desired; was appointed by the house of burgesses (1773) a member of the committee on correspondence with other colonies; prepared the draught of instructions for the Va. delegates to the congress in Philadelphia in Sep., 1774; and built and occupied his Monticello mansion. His patriotic labors may be said to have begun the day when he heard Patrick Henry deliver his memorable speech in the Va. legislature after the passage of the Stamp Act. Though a student his ardor was fired by Henry's burning and defiant words, and in after life he frequently recalled the inspirations of that hour. He made himself one of the best informed men of the day, was naturally studious and observing, was an attractive speaker, and as a writer was remarkably quick, comprehensive, and trenchant. Possessing the qualities requisite for a man active in momentous public affairs, and having gained the confidence and esteem of the citizens of his colony, he naturally became prominent in the swift public movements of the day, and after about 8 years of professional practice circumstances transformed the active lawyer into the busy publicist and statesmen.

In 1775, Mar., he was a member of the convention called to consider the course that Va. should take in the struggle that then seemed inevitable; and which, after Patrick Henry's peroration 'We must fight!' agreed that Va. should immediately be armed, on a plan arranged by a committee of which Henry, Washington, Richard Henry Lee, and J. were appointed members. The convention also agreed that if a vacancy occurred in the Va. delegation to the Philadelphia congress, J. should fill it; and it was through the emergency thus provided for that he took his seat as a member of the continental congress June 21, the day that news of the battle of Bunker Hill reached Philadelphia, and Washington left the city to take command of the army at Cambridge. J. bore with him to the congress the reply of Va. to Lord North's proposal, which he had drawn up at the request of his associates in the Richmond convention.

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This document met warm approbation in the congress, and after he had served on the committee appointed to draw up a declaration of the causes that led the colonists to resort to arms, he was requested to prepare the reply of the congress to North's 'conciliatory proposition.' This he did, retaining much of the substance of the Va. 'reply.' His draught was adopted by the congress, which adjourned after providing for a second congress to be convened in Philadelphia 1776, May 10. In Nov. an official notification of the rejection of the last petition for the redress of the wrongs complained of was received from England. J. was elected a delegate to the second congress, and Va. began preparing for war. Five days after the assembly of the congress, Va. formally instructed her delegates in it to propose a declaration of the independence of the colonies. Richard Henry Lee, one of the delegates, in obedience to the instruction moved (June 7) that independence be declared, and on the motion a committee was appointed (June 10) to prepare the draft of the declaration, consisting of J., Benjamin Franklin, John Adams, Roger Sherman, and Robert R. Livingston. J. was unanimously 'pressed' by his associates on the committee to prepare the declaration, and after he had completed it, Franklin and Adams suggested a few verbal changes, and the committee then approved and transmitted it to the congress June 28. July 2 Lee's motion to declare the colonies independent of Great Britain was taken up and adopted, and the committee's draught of the form of declaration was then presented. The debate on the document lasted nearly three days, the draught was thoroughly and severely revised, numerous additions, suppressions, and amendments were made, and after it had been powerfully opposed and supported by the members, it was adopted and signed late on Thursday afternoon, July 4. A few days afterwards J. was appointed a member of the committee that devised the seal and adopted the motto *E Pluribus Unum* for the new nation, and then resigned his seat to look after neglected private matters and to aid in changing the laws of Va. to more perfect harmony with the spirit of the great declaration.

In 1776, Sep., he resumed his seat in the Va. legislature, and was engaged in formulating plans for the future govt. of the state when (Oct. 8) he was informed by a special messenger that the congress had elected him joint commissioner with Benjamin Franklin and Silas Deane to negotiate treaties of commerce and alliance with France. Constrained by a sense of duty to his family and state, he declined the office, and applied himself to the revision of the laws of the commonwealth as chairman of a committee appointed by the legislature for the purpose, consisting of George Wythe, James Madison, George Mason, Edmund Pendleton, and other distinguished lawyers. This task occupied nearly three years, and to J. were particularly assigned the common law and statutes extending to the 4th of James I. Among others he formulated four bills for legislative action, which he considered as 'forming a sys-

tem by which every fibre would be eradicated of ancient or future aristocracy.' They were for (1) the repeal of the laws of entail; (2) the abolition of primogeniture and for equal partition of inheritances; (3) the restoration of the rights of conscience and relief of the people from taxation for the support of a religion not theirs (known as the bill for establishing religious freedom); (4) the establishment of a system of general education. The social fabric of Va. at the time was such as to make it a matter of extreme boldness for any one to suggest such radical overturnings of ancient laws and customs as these bills proposed. That they should excite intense opposition was natural; yet the first two—the severest socially of all—were adopted, the third was not disposed of till 1786, and the apparently harmless fourth was at once rejected. J. appreciated the fact that the legislature for the first time had the power of enacting laws for the commonwealth that were not subject to approval or change by any sovereign or privy council, and sought to free the new-born republicanism from all possible 'fibres of aristocracy.' He went so far as to propose bills for the introduction of trial by jury into the courts of chancery, and to provide for the gradual emancipation of the slaves; but, though these were defeated, he secured the adoption of another, and, strange to say, without opposition, forbidding the further importation of slaves into the state. He secured also the transfer of the capital from Williamsburg to Richmond.

In 1779, Jan., the legislature elected him gov. of Va. to succeed Patrick Henry, whose third term expired June 1; and between these dates he employed himself in striving to ameliorate the condition of the British and Hessian prisoners of war of Burgoyne's army, encamped near Monticello. He assumed the office at a most critical period in the revolutionary struggle, and at a time particularly depressing and threatening to his state. The general campaign of the Americans had recently been discouraging. Washington had been foiled in his attempts to drive the British out of the north, and they, appreciating the fact, had decided to extend their field of operations into the south. Va. had made many and costly sacrifices to advance the cause. And now, with nearly 10,000 of the flower of her citizenship in Washington's army, with her long lines of sea-coast and river-bank without the means of effectual resistance to a hostile fleet, and with her various resources taxed almost beyond the means of her people, the prospect of her territory becoming the theatre of the new campaign was dismal in the extreme. J. applied himself with vigor and promptness to the serious duty that confronted him. While providing for the troops with Washington, he hastened large supplies to Gen. Gates then in the south, supported Gen. George Rogers Clarke in his attempt to hold in subjection the Indians on the w. boundary of Va., and kept vigilant guard over the British and Hessian prisoners within the state. The defeat of Gates at Camden and the loss of the vast stores of material there collected was the first misfortune of J.'s administration.

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Soon afterward the British under Gens. Leslie and Arnold took possession of Hampton and Portsmouth. Arnold ascended the James river with a fleet, entered Richmond 1781, Jan. 5. and was ravaging and burning the place, when he became alarmed at the preparations for resistance, and returning to his fleet, made his escape down the river, having held the city less than one day. Within 5 days from J.'s summons to the co. militia, he started in pursuit of Arnold with 2,500 troops, and his force hourly increased. To a fortunate change in the wind which expedited the seaward flight of his fleet, Arnold owed his escape from destruction. Another British force under Gen. Phillips sailed up the James and threatened Richmond in Apr., but was withdrawn to aid Cornwallis in his efforts to capture Lafayette (who eluded him) and to capture or disperse the legislature, then adjourned to Charlottesville. A body of cavalry under Tarleton captured J.'s Monticello estate, but spared it in consideration of his kindness to the British prisoners encamped near by. Tarleton was ambitious to capture J., and very nearly did so. Incensed at his failure, he rejoined Cornwallis, and the two first occupied and then wantonly destroyed J.'s Elk Hill estate. The successes of the British in Va. induced many persons to arraign the governor and state officials for inefficient administration, though it is difficult to believe that J. or any other man could have done more to oppose the enemy with the very limited means at command. Near the close of his term, J. acquiesced in the belief of many that the situation demanded a strong military man at the head of the state govt. and declined renomination. J. resumed his seat in the legislature; the surrender of Cornwallis 1781, Oct. 17, dispelled the great gloom that overhung Va.; and when J. rose in his place in the legislature and stated his willingness to answer any charges against his official conduct, the response was the introduction and passage without an opposing vote of a resolution tendering him the thanks of the general assembly for his administration, and expressing the desire of that body in thus publicly avowing their opinion 'to obviate and to remove all unmerited censure.'

In the autumn of 1782, while grieving over the death of his wife, J. was unanimously elected by the congress one of the plenipotentiaries to negotiate a treaty of peace with England, but before he was ready to sail, news was received that the preliminaries had already been agreed to. In 1783, June, he was re-elected member of the congress. On taking his seat in Nov. he was appointed chairman of the committee to which was referred the definitive treaty of peace, and in that capacity reported it to the congress. He was also chairman of the committee on currency, and proposed and secured the adoption of the present system of coinage. At this session he prepared a plan for the temporary govt. of the w. territory, which Va. had ceded to the federal govt. 1780, in which this memorable clause was embodied: 'that after the year 1800 of the Christian era there shall be neither slavery nor involuntary servitude in any of the said states (i.e., those created out of the ter-

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ritory), otherwise than in punishment of crimes whereof the party shall be duly convicted to have been personally guilty.' His plan, with this clause stricken out, was adopted by the congress. 1784, May 7, he was again elected by the congress a plenipotentiary to negotiate commercial treaties with foreign powers in association with Franklin and Adams, and made his residence in Paris, where he published his *Notes on Virginia*. In 1785, Jan., Franklin secured his much sought relief from the French mission, and May 2 J. received his commission as sole minister-plenipotentiary to the king of France. During his residence abroad the Va. legislature adopted the *Freedom of Religion* bill, which he had introduced 1776. He proved himself an able, sagacious, and popular representative; ever eager to benefit his country, her people and institutions by whatever he could see, learn, or purchase in Germany, Italy, or the French provinces. His futile efforts to secure the release of American captives in Algiers without paying the dey enormous ransoms, doubtless inspired the order that led to the vindication of American rights in the Mediterranean, and rendered that sea as safe to commerce as the English Channel, after he had become pres. of the United States. In 1789, he received a leave of absence for six months, and returned to Va. for brief rest. The day he landed at Norfolk he read a newspaper announcement that Pres. Washington had appointed him sec. of state in the first cabinet of the new govt., and was formally welcomed by a committee of the Va. legislature with Patrick Henry at its head. He entered on the duties of his new office in New York, 1790, Mar. 22, having for cabinet associates Alexander Hamilton, sec. of the treas., Henry Knox, sec. of war, and Edmund Randolph, attor. general. His cabinet office soon became not only irksome but perplexing. He had given his sympathy to the school of politics in course of development in France during his residence there, and was opposed to the fundamental features of the British constitution. He advocated state sovereignty and decentralization, believed in the 'sufficiency of human reason for the care of human affairs,' held 'the will of the majority to be the natural law of every Society, and the only sure guardian of the rights of man,' and declared that while the general reason of Society might sometimes err, its errors would be honest, solitary, and short-lived, and that the people would be safe with the 'general reason of Society' even in its deviations, 'for it soon returns again to the right way.' In opposition to these principles, Hamilton and his followers believed the republican form of govt. to be a temporary expedient, and favored the strongest centralization of power after the manner of the British govt. The disagreements of these cabinet officers extended almost to every matter of public concern, and as new subjects of discussion were being constantly brought up, the divergence grew wider and deeper and finally personal in character. Both officers sought to resign, but Washington succeeded in placating each without offending the other, and kept them in service till 1794, Jan. 1,

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when he accepted J.'s resignation. J. then returned to Va. in the belief that he had closed his public career, and applied himself to the care of his estates. During the spring and summer, the friction in Washington's cabinet increased in spite of the excitement over the 'whisky insurrection' in Penn., and on the suppression of that outbreak Hamilton resigned. Washington immediately invited J. to resume the office of sec. of state, but he declined with the declaration that he would never again 'engage in anything public.' In 1796, however, on Washington's refusal of a third presidential term, J. became a candidate for the succession, and failed by only three electoral votes. Being the next highest candidate to John Adams, the law then in force made him vice-pres. of the United States. Before entering on the duties of this office, he began compiling for his own guidance as pres. of the senate the manual of parliamentary practice that bears his name, and is still the popular basis of conduct of the leading American deliberative assemblies. He took no part in the administration of the govt., but was active in endeavors to influence the public mind, especially against the Hamilton policy. Holding that the alien and sedition laws were unconstitutional and subversive of human rights, he drew up the celebrated 'Ky. resolutions' of 1798, and steadfastly opposed the war feeling against France that had been heightened by the war message of Pres. Adams 1797.

The presidential election 1800 was a surprise, even to the leading men in the two great parties, and it brought about strange combinations. With the defeat of John Adams for re-election through the efforts of Aaron Burr in N. Y., the throwing of the electoral contest into the house of representatives for decision, the presidential aspirations of Burr, and the unexpected and hearty support given J. by Hamilton—who had previously neglected no opportunity to injure him and bring ridicule on his policy before the country—the principles for which J. had so long and earnestly contended gained the ascendancy, and J. became pres. of the United States with Aaron Burr as vice-president. In his brief inaugural message, he endeavored to conciliate the political factions, and in selecting his cabinet advisers he made such a wise choice that the cabinet was preserved in complete harmony through both his terms. It was composed of James Madison, sec. of state; Albert Gallatin, sec. of the treas.; Henry Dearborn, sec. of war; Robert Smith, sec. of the navy; Gideon Granger, postmaster-gen.; and Levi Lincoln, attor. general. His early administration was characterized by innovations on the old order of things, in keeping with his life-long declarations. He pardoned every person restrained of his liberty under the alien and sedition law; refused to remove public office-holders belonging to the opposite (federalist) party excepting for official misconduct or 'active and bitter opposition to the order of things which the public will had established;' abolished the semi-royal etiquette that prevailed at the seat of govt.; prohibited the weekly levees at the White House; established the rule

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that before he would pardon a criminal the judges who had tried him should sign the petition; refused to accept any present while in office or any attention while travelling that would not have been his due as a private citizen; and conformed his personal habits and manners to the line of simplicity that threaded his whole republicanizing policy. Of the public events of his first administration, the purchase of the vast La. territory from France for \$15,000,000, with the assumption by the U. S. govt. of all just claims against the territory, was the greatest. The success of the naval expedition which he dispatched to punish the Barbary pirates and put an end to the exactions of tribute by the dey of Algiers, not only freed the Mediterranean from a long-standing menace to the world's commerce, but added to the popularity of the administration at home and to the respect for the nation abroad.

In 1804 he was renominated for pres. by the republicans, with George Clinton for vice-pres.; and the federalists again nominated Charles C. Pinckney against him, with Rufus King for vice-pres.; J. received 162 electoral votes and Pinckney 14. He reappointed his first cabinet, and entered on an administration more exciting than the first, yet productive of much internal improvement. The first important event was the action growing out of Andrew Jackson's warning of J. against the mysterious movements and designs of Aaron Burr. J. reached the conclusion that Burr was guilty of treason in plotting against the govt., and unsuccessfully attempted to convict him on the charge. Among other outgrowths of this action was the unfortunate estrangement of J. and Jackson, the latter declaring that Burr could not be convicted of the charge and publicly denouncing J. as a persecutor. (See JACKSON, ANDREW.) During this term the country was plunged into excitement by the loss of its foreign trade through its neutrality in the war between Great Britain and France, the impressment of American sailors by British naval officers, the embargo laid on American merchantmen by the congress, and the legislation and diplomatic correspondence occasioned by the trying situation. A threatened war with both Great Britain and Spain was averted; and J., recommending the congress to suspend commercial intercourse with Great Britain and France while belligerents, had in view the introduction between nations of 'another umpire than arms,' the umpire now universally respected as arbitration. In domestic affairs, the w. territories were systematically explored by Capts. Lewis and Clarke; the national debt was largely reduced and taxes in proportion; the militia was reorganized; several important seaports were fortified; and a large number of Indian titles were extinguished by purchase. In 1809, Mar., after a public service nearly continuous through 44 years, J. retired to private life at Monticello in seriously embarrassed financial circumstances, a result of his intense application to the public weal. In 1814 he was compelled to sell his splendid private library, which was bought by the federal govt., and later he had to part with his beloved Monticello

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estate to satisfy financial obligations. He applied his declining years to the establishment of a system of public education in Va., and the reorganization of William and Mary College, which he had had in contemplation since 1779. He superintended every detail of the construction of the new institution, and saw it opened as the Univ. of Va. 1825, Mar.; but he did not live to see the accomplishment of his labor in behalf of a common-school system. His health was good till within a few days of his death, and life was spared him to see the opening hours of the 50th anniversary of the adoption of the Declaration of Independence. He was buried on his Monticello estate, and over his grave was placed a stone containing this inscription, which he had prepared for the purpose: 'Here was buried Thomas Jefferson, author of the Declaration of Independence, of the Statute of Virginia for Religious Freedom, and Father of the University of Virginia.'

JEF'FERSON CITY: capital of Missouri, co. seat of Cole co., on an eminence on the s. bank of the Missouri river, abt. 140 m. from its mouth, and 125 m. from St. Louis, with which it is connected both by the river and the Pacific railroad. The elevated site commands a fine view to the north. The city is well built, has good public schools, and is the seat of a Prot. Episc. College; and of Lincoln Normal Institute, a state institution for education of colored young men and women. It has a brisk trade with the hunters and trappers, and overland emigrants to California and Utah. The city has a state-house, state library of 25,000 vols., governor's residence, state penitentiary, etc. Pop. (1880) 5,271; (1890) 6,742; (1900) 9,664.

JEFFERSONITE, *n.* *jef'fer-sŭn-ĭt* [after *Jefferson*]: a variety of augite from Sparta, in New Jersey, of a dark olive or black color.

JEF'FERSONVILLE: city, cap. of Clarke co., Ind.; on the Ohio river, and the O. and Miss. and J. Madison and Indianapolis railroads; 108 m. s. of Indianapolis, 126 m. w. of Cincinnati. It is on high ground at the head of the falls of the Ohio river; is opposite Louisville, Ky., with which it is connected by one of the finest and longest iron railroad bridges in the United States; commands a beautiful panorama of natural scenery, including the river, here a m. wide and containing several pretty islands, the falls (26 ft. in 2 m.), and the city of Louisville; has valuable water-power and shipping facilities; contains 14 churches, high and grammar schools, 2 national banks (cap. \$250,000), gas, water, and electric-light plants, the southern state prison, and an extensive U. S. govt. depot of supplies; and does a large business in steamboat, locomotive, and railroad car building, general machinery, and flour. J. is the site of old Fort Finney. Pop. (1870) 7,254; (1880) 9,357; (1890) 10,666; (1900) 10,774.

JEFFREY, *jěf'rĕ*, FRANCIS, Lord: 1773. Oct. 23—1850, Jan. 26; b. Edinburgh: Scottish critic and lawyer. He studied classics, logic, and belles-lettres at Glasgow and Oxford, and law at the univ. of his native city. In 1794, he was

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called to the bar. Two years before this, he had become a member of the Speculative Soc. (in connection with the univ.). J. soon became prominent among the members by the keenness and liveliness of his intellect, and the elegance of his literary taste, but his progress at the bar was slow, on account partly of the antipathy which then existed to literary lawyers, and partly of his political opinions. Meanwhile he and several other young men in Edinburgh, ambitious of finding a wider outlet for their talent than discussions in the Speculative Soc. or the practice of the bar afforded, conceived the idea of starting a critical journal. The first proposer of the scheme was the Rev. Sydney Smith. The result was the establishment of the *Edinburgh Review* (q.v.), of which J. became editor, retaining the office till 1829. His own contributions were generally the most brilliant and attractive. On ethics, politics, and many of the questions affecting the social well-being of man, he wrote with much clearness, penetration, and force; but he is said to have placed the highest value on his *Treatise on Beauty* (see *ÆSTHETICS*), a charming mélange of criticism, description, and sentiment, but of doubtful philosophic worth. After some years, J.'s practice at the bar began to increase, in jury trials he shone to great advantage, particularly in the trials for sedition, 1817-22. In 1830, he became lord advocate for Scotland; and after the passing of the Reform Bill, he was returned to parliament for Edinburgh, which he continued to represent till 1834, when he gladly exchanged the turmoil of party politics for the duties of a judge of the court of session. During the latter years of his life, J. resided at Craigcrook Castle, in the vicinity of Edinburgh, where he died. As a critic, J. had great fluency in writing, a gift of mockery and ridicule, conventional sentiment, and a keen eye to detect foibles and oddities; but he was deficient in comprehension of principles, and in recognition of the hidden elements of moral or intellectual power. He had fine social gifts and a personal character of the highest integrity. A selection of his Essays, 4 vols., appeared in 1844. See biography of J., by his friend, Lord Cockburn (2 vols. 1852); also Carlyle's *Reminiscences* (1882), and Macvey Napier's *Correspondence*.

JEFFREYS, *jěf'riz*, GEORGE, Lord: 1648-1689, April, 19; b. Acton, Denbighshire, Wales: English jurist. He was educated at Shrewsbury, in St. Paul's School, London, and in Westminster School; was called to the bar 1668, began practicing in the Old Bailey and other inferior London courts, rose rapidly at the bar, and became common serjeant of London 1671. The dissolute habits formed in early youth increased as he grew older; he acquired the coarse and bullying manners of the criminals with whom he had professional dealings; and not only did he become absolutely brutal at the bar, but unscrupulous and overbearing in his other associations. From avowed sympathy with the country party, he sought personal popularity and aggrandizement by affiliating with the Puritans, and at the same time engaged in base intrigues

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to secure the favor of the court party. He was rewarded by being knighted, and appointed solicitor to the Duke of York 1677, recorder of London 1678, king's serjeant and chief justice of Chester 1680, baronet 1681, crown counsel against Lord Russell, and chief-justice of the king's bench 1683. He was compelled to kneel before the house of commons and receive a public reprimand for base official conduct. Afterward he sentenced Algernon Sidney 1683, presided at the trials of Baxter and Oates 1685, was made a peer by James II. 1685, and as head of a commission to try Monmouth's 'rebels' ordered 320 persons hanged and 841 sold into slavery in tropical colonies. After the close of this 'bloody assize' he was appointed lord high chancellor of England 1685, Sep. 28. He prepared to leave the country on the flight of the king, but lingering in a drunken debauch was seized by the mob, and would have been torn to pieces had not the authorities rescued him and placed him in the Tower, where he died four months afterward.

JEHAD, rather **JIHAD**, n. *jě-hăd'* [Ar.]: in the *East*, a war waged by Mussulmans against infidels or idolaters; a religious war.

JEHOVAH, n. *jě-hō'vă* [Heb. *Yehovah*—from *hāvăh*, to be]: the Hebrew name of the Deity; the eternal and self-existent Being. **JEHOVIST**, n. *jě-hō'vist* [see **ELOHIST**]: one who maintains that the vowel-points of *Jehovah* express the true pronunciation of that word; the writers, or one of them, who is supposed to have introduced the passages of the Old Test. in which the name Jehovah occurs, particularly in the Pentateuch. **JEHOVISTIC**, a. *jě'hō'vîs'tik*, relating to *Jehovah* as the name of God; denoting certain passages in the Old Test. where *Jehovah* occurs as the name of the Supreme Being.

JEHOVAH, *jě-hō'vah* [Heb. *Yehovah*; more correctly, *Yahve*, *Yahveh*, or *Yahvâh*—or according to Delitzsch and Sayce, *Jahu* or *Jeho* (*Yahu*, *Yeho*); in poetry, *Yâh*; etymology doubtful, but formerly taken from Heb. *hāvăh*, 'to be']: one of the names of God in the Old Testament. Its meaning—according to the etymology above given—is, 'He that is,' 'the Being;' or, since the word contains all the forms of the past, present, and future tenses, 'the eternal One'—He who was, and is, and is to come. Many have considered it to contain a reference to the future manifestation of God in the Christ and by the Spirit. J. is generally employed to express a different conception of the Deity from that contained in the word *Elohim* (q.v.). The latter appears to be the older term, in use before the Hebrews had attained a national existence; whereas *Jehovah* exclusively seems to denote God as making Himself known to the chosen nation, the Hebrews—the God supreme over all who, according to Ex. vi. 3, had not 'made Himself known' under this name to the patriarchs before the time of Moses. That J. is specifically God as making Himself known in the line of the Hebrew revelation, is clear from the fact, that the heathen deities never receive this name;

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they are always spoken of as *Elohim*. Moreover, the altars, the sacrifices, the festivals, the tabernacle, the temple, the priesthood, and the prophets, all belong emphatically to Jehovah. Gideon shouts, 'The sword of Jehovah and of Gideon,' as a Roman warrior would have invoked the aid of Jupiter. In one sense, the term J. is less broad and universal in its application than *Elohim*, who, in the first verse of the Bible, appears as the creator of heaven and earth, and who is God over all, irrespective of nations; but in another sense, it clearly indicates an advance in religious conception. For, while *Elohim* is introduced more as an Almighty Creative Power than a 'Being,' J. is God in full personal relation to man—He speaks to his creatures, makes covenants with them, becomes their law-giver, and desires their homage and worship. The Hebrew writers even run their representations of the Divine personality into what seem to us extreme forms of anthropomorphism.—Deep reverence for the Deity and the Divine name led the Jewish church to the substitution of Adonai (*Lord*) in the *pronunciation* of J., the latter being vowelled by the Masoreths like the former.

A very nice and difficult controversy with respect to the authorship and unity of the Pentateuch, has long been carried on among scholars in connection with these two names: see GENESIS: PENTATEUCH.

JEHU, n. *jē'hū* [after *Jehu*, mentioned in II Kings ix. 20]: one who is famous as a coachman or driver; one who drives quickly and somewhat recklessly.

JEISK, *yā'isk*, or EISK, *ā'isk*: town of Russia, in the country of the Kuban Cossacks, or Black Sea Cossacks, on the e. shore of the Sea of Azov, 60 m. s.w. from Azov. It stands on the shore of a small land-locked bay, into which flows the river Jeisk. It was founded by imperial ukase 1848, with a view to its being a trading seaport, and an entrepôt for the agricultural produce of the surrounding country. Considerable privileges were guaranteed to its inhabitants, and it has rapidly sprung into importance. Pop. (1880) 30,000; (1884) 23,725.

JEJEEBHOY, or JEEJEEBHOY, *jē-jēb-hoy'*, Sir JAMSET-JEE: Parsee merchant-prince and philanthropist: 1783, July 15—1859, Apr. 15; b. Bombay, of poor parents. He early showed great aptitude for mercantile pursuits, and his father-in-law, Framjee Nusserwanjee, Bombay merchant, took him into partnership. While still young, he visited most of the maritime countries of Asia, besides Egypt, Syria, and England. After he had become chief partner in his father-in-law's firm, the wealth of which rapidly and prodigiously increased, J. kept his eye on the progress of political events in Europe; and when peace was restored there after the fall of Napoleon, the Indian trade was so much benefited that, 1814–19, the value of the imports from Europe rose from £870,000 to £3,052,000—in which increase, we are informed, 'the house of Sir J. and his father-in-law enormously participated.' When he had completed his 20th year of business (1820), he had amassed

JEJUNE—JELLACHICH DE BUZIM.

an immense fortune, and was universally acknowledged the first merchant in the East. He now began to show, on a magnificent scale, his liberal and philanthropic spirit. His contribution to the Jamsetjee Jejeebhoy Hospital was 160,500 rupees; his endowment of the Parsee Benevolent Institution, 440,000 rupees; the Mahim Causeway, built by him, cost 150,500 rupees; the Dhurumsalla, or Poor Asylum, 150,000 rupees; the water-works constructed by him at Poona cost 180,000 rupees; and the endowment of the Jamsetjee School of Industrial Arts, 100,000 rupees. Altogether, between 1822 and 1858, Sir J. spent 'upwards of a quarter of a million pounds sterling in founding, endowing, or supporting undertakings of a purely benevolent character.' Parsee and Christian, Hindu and Mussulman, were alike the objects of his splendid beneficence. At length the fame of his munificence reached the ears of Queen Victoria, who conferred on him the honor of knighthood. Other honors followed; and 1857 he was made a baronet of the United Kingdom. He was succeeded in the baronetcy by his eldest son, Cursetjee Jamsetjee Jejeebhoy, who, in accordance with his father's will, took his father's name. He again was succeeded 1877 by his son Manekjee, who also assumed the name of the first baronet.

JEJUNE, a. *jē-jūn'* [L. *jējūnūs*, fasting, empty, dry]: empty; wanting; vacant; barren; dry; hungry; uninteresting. JEJUNE'LY, ad. *-lī*. JEJUNE'NESS, n. emptiness; barrenness; poverty. JEJU'NUM, n. *-jū'nūm*, a part of the small intestines between the duodenum and ileum, so called because always found empty (see ILEUM). JEJUNE NARRATIVE, an uninteresting, tedious narrative.

JELALABAD, *jél-â-lâ-bâd'*: town of Afghanistan, stands near the Cabul, in a fertile plain separated from Peshawur by the famous Khyber Pass. It thus occupies a commanding position on the grand route between India and central Asia. The place acquired historical interest during the Afghan wars, having been heroically held by Sir Robert Sale (1841-2), notwithstanding the fatal disasters of the first expedition, till it was relieved by the triumphant advance of the second. In the war of 1878-80, the British entered J. without resistance: see AFGHANISTAN. Pop. abt. 3,000.

JELATOM, *yā-lâ-tōm'*, or JELATINA, *yā-lâ-tē'nâ*, or ELATMA, *yā-lât'mâ*: town of Russia, govt. of Tambov, on the left bank of the Oka. Woolen cloths, vitriol, and sulphur are here manufactured. Pop. (1884) 7,560.

JELETZ, *yā'lêts'*: town of Russia, govt. of Orel, 110 m. e.s.e. of the town of Orel, on the Sosna. In the vicinity are extensive iron-mines, and the town has become famous for its wheaten flour, exported throughout Russia. Pop. (1880) 30,540; (1885) 39,302.

JELLACHICH DE BUZIM, *yě'l-lâ-chīch dēh bō'zīm*, JOSEPH, Baron: 1801-1859, June; b. Peterwardein: Austrian general, and Ban of Croatia. His father, descendant of an old Croatian family, was a general in the Austrian service, and attained celebrity in the Turkish wars, and in

JELLOPED—JENA.

those of the French Revolution. The baron was early employed in military service on the Turkish frontier, and distinguished himself by his courage and skill. He succeeded in winning in a high degree the confidence of the Croats, so that 1848 the court of Vienna was glad to appoint him Ban of Croatia, in order to secure the support of the Slavonian Croats against the Magyars of Hungary, and he was very active in the suppression of the Hungarian rebellion. J. died at Agram. He had a taste and some gift for poetry: a collection of his poems was published, Vienna, 1850.

JELLOPED, a. *jěl'ôpt*: in *her.*, a term applied to the comb and gills of a cock when of a tincture different from the body.

JELLY, n. *jěl'li* [F. *gelée*, the juice of meat or fruit which congeals on cooling—from *geler*, to freeze—from L. *gelārē*, to freeze—from *gělū*, icy-coldness, frost]: the strained liquid or juice of fruit after being boiled with sugar until it becomes a stiffened mass when cooled; the stiffened juice of boiled meat, sweetened and flavored, as calves'-feet jelly; some gluey substance which is semi-transparent. **JELLIED**, a. *jěl'lid*, brought to the consistence of jelly. **JELLY-FISH**, a popular name given to the medusæ, from their resemblance to a mass of jelly: see **ACALEPHÆ**.

JE'LUM: see **JHELUM**.

JEMIDAR, n. *jēm'î-dâr* [Hind. *jama-dar*, the keeper of a wardrobe, a musketeer]: a native officer in the Indian army having rank as a lieutenant.

JEMMAPES, or **JEMAPPES**, *zhā-mâp'*: village of moderate size, not far from Mons, in the Belgian province of Hainault, noted for the victory of the French republicans, 40,000 strong, under Dumouriez, 1792, Nov. 6, over the Austrians in nearly equal force. By this victory, the way into Belgium was opened to the French, and the spirits of the army and of the people greatly elevated by the first great victory of their raw levies over the disciplined and experienced Austrian troops. Pop. (1885) 11,322.

JEMMY: see **JIMMY**.

JENA, *jěn'a*, Ger. *yā'nâ*: town in the grand-duchy of Saxe-Weimar-Eisenach, former cap. of the duchy of Saxe-Jena, beautifully situated in a romantic valley at the confluence of the Leutra with the Saale. It derives celebrity chiefly from its university, but also from the great battle fought here between the French and the Prussians. Pop. (1880) 10,337; (1885) 12,017.

The *University of Jena* was founded about 1547 by Elector John Frederick of Saxony, who intended it to supply the place of Wittenberg as a great seat of learning and of evangelical doctrine. It soon acquired high reputation. The imperial authorization was obtained, after some delay and difficulty, 1558. It is the university of the minor Saxon states, and is supported by contributions from them all. Its library contains more than 200,000 volumes. The most flourishing period of the university was that of Duke

JENCKES—JENKINS.

Karl August, zealous patron of art and science, 1787–1806. To have attained academic honors in J. used to be no small recommendation to employment in other German universities, and many of the most distinguished ornaments of other universities have been students of this. Some of its professors were among the first and most successful supporters of the philosophy of Kant. Fichte founded a new school of philosophy here 1794, and the names of Schelling and Hegel are connected with Jena. The brothers Schlegel, Voss, Fries, Krause, and Oken have added to its celebrity in literature and science. The faculty of medicine, as well as those of theology and law, has reckoned many distinguished names. The most eminent theologians in recent times have belonged to the liberal school. There are in all about 70 professors and lecturers, and less than 500 students. The peculiar characteristics of German student life have always had full development here. The *Jenaische Literaturzeitung*, under the auspices of the university, is one of the most valuable literary and scientific journals.

The Battle of Jena was fought in the neighborhood of the town, 1806, Oct. 14. The Prussian army, about 70,000 men, was under the command of the Prince of Hohenlohe; while the French, commanded by Napoleon, amounted to 90,000. The former were completely defeated. On the same day, Davout defeated the aged Duke of Brunswick at Auerstädt, with 30,000 French against 60,000 Prussians, and these two battles decided for a number of years the fate of the Prussian kingdom and of n. Germany. The loss of the Prussians on that eventful day and in the conflicts of the preceding days amounted to 50,000 killed, wounded, and prisoners, besides the loss sustained by the Saxons, their allies. The French reported their loss 7,000, including 270 officers.

JENCKES, *jĕnks*, JOSEPH: 1602–1683, Mar. 16; b. Colbrooke, England: inventor. He removed from Hammersmith to the Saugus river, Mass. 1642, to superintend for an English company the development of the iron-ore, then recently discovered in the vicinity of that river. He was a master-mechanic, and is credited with having established the first iron foundry and forge in the American colonies, making the first molds, casting the first household and farm utensils, manufacturing the first machinery, establishing the first mint for coining money, cutting the dies for the first coin (the 'Masatusets' piece), building the first fire-engine in the country, and drawing up the first law for patenting inventions. He is believed to have been the first person of his name in America, the spelling of which has since been changed to Jenks.

JEN'GHIS KHAN: see GENGHIS KHAN.

JENISE'I: see YENISEI.

JENKINS, *jĕnk'inz*, EDWARD: author: b. Bangalore, India, 1838. He was educated at the High School and McGill College, Montreal, and at the Univ. at Penn., was admitted to the bar in London, England, 1864, and practiced

JENKINS—JENNER.

till 1873, when he entered political life as an ultra-liberal. He was appointed agent-gen. for Canada 1874, represented Dundee in parliament 1874-80, and was defeated in the city of Edinburgh 1881, Jan. He is the author of *Ginx's Baby* (1870); *Lord Bantam*; *The Coolie* (1871); *The Colonies an Imperial Unity* (1871); *Little Hodge*; *The Devil's Chain*; *Lutchmee and Dilloo*; *The Captain's Cabin*; *Fatal Days* (1874); *A Paladin of Romance*; *Contemporary Manners* (1882); and *Jobson's Enemies* (1883), beside a number of political essays and review contributions.

JENKINS, THORNTON ALEXANDER: naval officer: b. Orange co., Va., 1811, Dec. 11. He received a collegiate education, was appointed midshipman in the U. S. navy 1828. Nov. 1, promoted passed midshipman 1834, lieut. 1839, commander 1855, capt. 1862, commodore 1866, rear-admiral 1870, Aug. 15, retired 1873, Dec. 11. He served on the e. coast of Mexico through the Mexican war, commanded a hydrographical party of the U. S. coast survey 1848-51, drafted the law under which the present American lighthouse system was established and is maintained, aided in saving the forts at Key West and Dry Tortugas from capture by Confederates just before the civil war was opened, was fleet-capt. and chief of staff of Farragut's squadron in the Miss. river, commanded the *Hartford* at the passage of the Port Hudson and Grand Gulf batteries, was chief naval officer at the surrender of Port Hudson 1863, July, and commanded the *Richmond* and the 2d div. of Farragut's fleet blockading Mobile 1863-5. After the close of the war he was chief of the bureau of navigation, resumed the office of sec. of the lighthouse board (previously held 1850-8, 1860-2) 1869-71, and commanded the Asiatic squadron 1871-3. He d. 1893, Aug. 9.

JENNER, *jěn'ér*, EDWARD, M.D.: discoverer of vaccination: 1749, May 17—1823, Jan. 26; b. Berkeley, Gloucestershire, England; third son of the Rev. Stephen Jenner, vicar of the parish, and rector of Rockhampton. His scholastic education being finished, he was removed to Sodbury, near Bristol, to be instructed in the elements of surgery and pharmacy by Mr. Ludlow, an eminent surgeon there; and on the expiration of his term he went to London, in the 21st year of his age, to prosecute professional studies under the direction and instruction of the celebrated John Hunter (q.v.), in whose family he resided for two years. Under Hunter's superintendence, he became an expert anatomist, a sound pathologist, a careful experimenter, and a good naturalist. The influence of the master exerted a lasting effect on the pupil; and Hunter's letters, which J. carefully preserved, evince affectionate feeling and community of tastes. On leaving London, J. settled at Berkeley, where his sound professional knowledge and kindly disposition soon brought a large practice. In 1788, his well-known memoir, *On the Natural History of the Cuckoo*, appeared in the Transactions of the Royal Soc., containing the results of investigations begun at the request of Hunter. A few years afterwards, the fatigues of general practice having be

JENNET.

come irksome to him, he resolved to confine himself to medicine, and with that view he obtained the degree of M.D. from the Univ. of St. Andrews.

The discovery of the prophylactic power of vaccination, by which the name of J. has become immortalized, was the result of a prolonged series of observations and experiments. His attention, while he was yet a youth, was forcibly attracted to the nature of the cow-pox in the following manner. He was pursuing his professional education in the house of his master at Sodbury, when a young country-woman came to seek advice. The subject of small-pox being mentioned in her presence, she observed: 'I cannot take that disease, for I have had cow-pox.' This was before 1770. It was not till 1775 that, after his return to Gloucestershire, he had an opportunity of examining into the truth of the traditions respecting cow-pox; and it was five years later before he began clearly to see his way to the great discovery that was in store for him. In 1780, May, while riding with his friend Edward Gardner, on the road between Gloucester and Bristol, 'he went over the natural history of cow-pox; stated his opinion as to the origin of this affection from the heel of the horse [when suffering from the 'grease']; specified the different sorts of disease which attacked the milkers when they handled infected cows; dwelt upon that variety which afforded protection against small-pox; and with deep and anxious emotion, mentioned his hope of being able to propagate that variety from one human being to another, till he had disseminated the practice all over the globe, to the total extinction of small-pox.'—Baron's *Life of Jenner*, p. 128. Many investigations regarding the different varieties of cow-pox, etc., delayed the actual discovery 16 years, when at length the crowning experiment on James Phipps (see INOCULATION) was made 1796, May 14, and J.'s task was virtually accomplished. This experiment was followed by many of the same kind; and 1798 he published his first memoir, *An Inquiry into the Causes and Effects of the Variolæ Vaccinæ*. Although the evidence accumulated by J. seemed conclusive, yet the practice met violent opposition until a year had passed, when more than 70 of the principal physicians and surgeons in London signed a declaration of their entire confidence in it. His discovery was soon promulgated throughout the civilized world. Honors were conferred on him by foreign courts, and he was elected an honorary member of nearly all the learned societies of Europe. Parliament voted him, 1802, a grant of £10,000, and in 1807, a second grant of £20,000; and in the year 1858, a public statue in his honor was erected in the metropolis. His latter days were passed chiefly at Berkeley and Cheltenham, and were occupied in the dissemination and elucidation of his great discovery. He died of apoplexy at Berkeley.—J. was noted for the benevolence of his disposition, which seems even more than his scientific enthusiasm to have urged him onward to his beneficent discovery.—See SMALL-POX: VACCINATION.

JENNET, n. jèn'èt [OF. *genette*; F. *genet*, a Sp. horse: Sp. *ginete*, a horseman, a nag]: a small Spanish horse.

JENNETING—JEQUITINHONHA.

JENNETING, n. *jěn'nět-ìng* [F. *jeanneton*]: an apple ripe about June; a kind of early apple.

JENNINGS, *jěn'ìngz*, **WILLIAM**: 1701–97; b. England: miser. He was son of an aide-de-camp to the Duke of Marlborough, had William III. for godfather at his baptism, was a page to George I. several years, and, taking up his residence (1722) in a grand unfinished mansion belonging to his father in Suffolk—where he had for near neighbor the equally celebrated miser John Elwes—passed the remainder of his life in accumulating wealth. He never married, dressed shabbily, ate little food and that the commonest, frequented the gambling clubs of London to lend money at enormous interest, and died worth \$5,000,000 but intestate, never having had his will executed. Under the law his property passed into chancery, where people of his name in England and the United States have ever since sought to acquire it as heirs.

JENNY, n. *jěn'nǐ* [by some said to be after *Jenny*, the wife of the inventor, *Arkwright*; by others from *gin*, a corruption of *engine*]: a machine for spinning. *Note*.—**JENNY** is a familiar proper name applied to things in personification, as the F. *Jean* and *Jacques*; Eng. *Jack* and *John*: see **JACK** 1.

JENTACULAR, a. *jěn-tǎk'ũ-lér* [L. *jentāculūm*, a breakfast taken immediately on getting up]: applied to a breakfast taken early in the morning, or immediately on getting up. **PRE-JENTACULAR**, applied to what is done early in the morning, as taking a breakfast before getting up.

JENYNS, *jěn'inz*, **SOAME**: 1704–1787, Dec. 18; b. London: author. He was educated at Cambridge Univ., elected member of parliament for Cambridgeshire 1742, and afterward for Dunwich and Cambridge; and was a commissioner of the board of trade and plantations 1755–80. He was noted for wealth, wit, and social standing. He published two vols. of poems, *The Art of Dancing* (1727) and *Miscellanies* (1770), a prose work, *Free Inquiry into the Nature and Origin of Evil* (1756)—severely criticised by Dr. Johnson; and his celebrated *View of the Internal Evidence of the Christian Religion* (1776)—widely praised for its literary merits, and considered by many the best argumentative presentation of the subject.

JEOPARD, v. *jěp'érd*, or **JEOPARDIZE**, v. *jěp'ér-diz* [OF. *jeu parti*; mid. L. *jocus partītūs*, an even chance, a choice of two alternatives—properly a game in which the chances are even, hence anything uncertain or hazardous—from F. *jeu*; L. *jocus*, game, sport—and F. *parti*; L. *partītūs*, divided]: to expose to loss or injury; to hazard, imperil, or endanger. **JEOP'ARDING**, imp. **JEOP'ARDED**, pp., or **JEOP'ARDIZING**, imp. **JEOP'ARDIZED**, pp. *-dizd*. **JEOP'ARDY**, n. *jěp'ér-dǐ*, exposure to loss, injury, or death; hazard; peril; danger.—**SYN.** of 'jeopard': to peril; endanger; hazard; risk; expose; jeopardize.

JEQUITINHONHA, *zhā-kē-tēn-yōn'yá*: river of Brazil, known also as Rio Grande do Belmonte; rising in the province of Minas Geraes, 9 m. w. of the town of Serro,

JERASH—JERBOA.

flowing first through the province, then n.e. into the province of Bahia, and after a course of 750 m. falling into the Atlantic near the town of Belmonte, lat. $15^{\circ} 50'$ s. It drains an area of 19,800 sq. m., flows through a mountainous region in its upper course, provides one of the most magnificent falls in Brazil where it crosses the Minas Geraes and Bahia boundary, widens and grows more shallow in its lower course, and has numerous sand bars at its entrance. The rich products of the two provinces are diverted into the Poassu, one of its arms, thence into the Pardo, and conveyed to Cannavieiras at the mouth of the Pardo, 40 m. n. of Belmonte.

JERASH': see GERASA.

JER'BA: see GERBA.

JERBOA, n. *jér-bō'ă* [Ar. *yerboa*], (*Dipus*): genus of rodent quadrupeds, of the family *Muridæ*, remarkable for great length of the hind-legs, and kangaroo-like power of jumping. The fore-legs are very small, hence the ancient Greek name *dipous* (two-footed). The tail is long, cylindri-



Jerboa (*Dipus Aegyptius*).

cal, covered with short hair, and tufted at the end. The jerboas are inhabitants of sandy deserts and wide grassy plains in Asia and the e. of Europe, Africa, and Australia; and one genus, *Jaculus*, in N. America. They are burrowing animals, nocturnal, very destructive to grain and other crops, laying up hoards for their winter use. They take prodigious leaps when alarmed; the fore-feet are then not used at all, but by means of the hind-feet and the tail, they leap, though they are small animals, several yards. Their flesh is said to resemble that of the rabbit.—Closely allied to the jerboas are the *Gerbils* (*Gerbillus*), small quadrupeds, also distinguished by great length of hind-legs and power of leaping, inhabitants of the warm and sandy portions of the old world.

JEREED—JEREMIAH.

JEREED, or **JERID**, n. *jër-ēd'* [Persian and Turkish]: wooden javelin, about 5 ft. long, used in Persia and Turkey, especially in mock fights.

JEREMIAD; n. *jër'ē-mī'ād*: a sad and desponding complaint or lamentation—so called from the prophecies of *Jeremiah*, especially the Book of Lamentations.

JEREMIAH, *jër-ē-mī'a* [Heb. *Yirmiyahu*]: Hebrew prophet, son of Hilkiah who was a priest of Anathoth, about three miles n. of Jerusalem. He prophesied under the reigns of Josiah, Jehoahaz, Jehoiakim, Jehoiachin, and Zedekiah B.C. 630–590, and even later. His character and fortunes are clearly discernible in his writings. To him, a man of an emphatically spiritual, truthful, self-sacrificing nature, it was given to predict in the midst of the, both politically and religiously, rotten state of the commonwealth, under the successive weak kings, its speedy destruction. Fearless yet hopeless, he delivers his mournful messages from year to year, and battles with despairing heroism against the inevitable. His life thus became one long martyrdom. We read of his enduring 'reproach and derision daily' (xx. 8); his townsmen of Anathoth threatened to slay him, if he did not stop prophesying woe (xi. 21); his own brethren, the house of his father, 'dealt treacherously' with him (xii. 6); so that his spirit at times failed him. There were two political parties in Judah at this time—in favor of a Chaldæan and of an Egyptian alliance respectively. Like the earlier patriotic prophets, J. repudiated both at first. The course of events, however, had necessitated a compromise, and the religious party—gradually decreasing in numbers and influence—had declared against Egypt, and in favor of Chaldæa. King Josiah, who belonged to that party, perished at Megiddo, in the valley of Esdraelon, in an attempt to stop the progress of Pharaoh-Necho (B.C. 609). After this, affairs grew worse. The Egyptian party became predominant, and J. was forced to take a side, and become a partisan as well as a prophet. He speaks of the king of Babylon as God's servant, and prophesies the destruction of the temple. A cry arose from the priesthood and the prophets for his life, and he escaped with difficulty (xxvi.). At last came the judgment: the best portion of the people were carried into captivity; and J. urged his countrymen to wait for the period of deliverance with religious fortitude and patience. A sudden irruption of the Egyptians drove the Chaldæans out of Judah, and J. was again exposed to persecution, thrown into a pit to die, and rescued only by the kindness of an Egyptian eunuch. The capture of Jerusalem by Nebuchadnezzar rendered the prophet's position more tolerable. J. had always counselled submission to the Chaldæans. He was even patronized by the conqueror, and offered a home at Babylon, but he preferred to reside among the wretched remnant of the people left in Judah (xl.). Intestine strifes, however, soon drove some to take refuge in Egypt. J. was carried off with the exiles, and here he is believed to have died, and his grave was long

JEREZ-DE-LA-FRONTERA—JERK.

shown at Cairo. According to others, however, he came back to Judæa. The writings of this prophet, dictated by him to Baruch, have been arranged with little regard to order, and the text is in a state of great confusion, notwithstanding that J. himself undertook two distinct redactions. They exhibit great tenderness and elegiac beauty of sentiment, but lack the sublime grandeur of Isaiah. He often borrows largely from his poetic predecessors. Several of the Psalms have been attributed to him, especially by modern critics. Hitzig numbers 34, which he believes to be the composition of Jeremiah; but such definiteness is conjectural. There is no reason to doubt that the Lamentations are properly ascribed to him, while the apocryphal work of J., mentioned by Jerome (Matth. 27), deserves little notice. Among the numerous commentators are Origen, Jerome, Theodoret, Oecolampadius, Sanctius, Venema, Michaelis, Umbreit, Henderson, Dahler, Knobel, Ewald, Hengstenberg, and Bunsen.

JEREZ'-DE-LA-FRONTÉ'RA: see XERES-DE-LA-FRONTÉ'RA.

JER-FALCON, or GER-, *jër* [Ger. *geier*, a kind of falcon]: see GYR-FALCON: GIER-EAGLE.

JERICHÓ, n. *jër'î-kō*: an anc. town of Palestine. Go TO JERICHÓ, *lit.*, wait patiently; be in no hurry; stay till you get experience, as applied to the presumption of young persons; though referring to II Sam. x. 4 and 5, the phrase in general terms points to a place at a considerable but indefinite distance where a deficiency or want might be supplied; *now*, used in a slightly contemptuous sense—be off with you; get out of my way or sight. GONE TO JERICHÓ, gone no one knows where. ROSE OF JERICHÓ, see ROSE OF JERICHÓ.

JERICHÓ, *jër'î-kō*: anciently one of the most flourishing cities of Palestine, two hours' journey w. from the Jordan, six hours n.e. from Jerusalem. Westward from J. lies a waste tract of limestone mountains, rising in stages; but the immediate vicinity is well watered and fruitful, yielding dates, raisins, balsam, and honey, yet a favorite abode also, in early times, of poisonous snakes. The capture of J. by the Israelites on their first entry into Canaan, its destruction, and the rebuilding of it by Hiel the Bethelite in the reign of Ahab, about B.C. 918, are recorded in Josh. vi.; I Kings xvi. 34. It appears to have been afterward the seat of a school of prophets (II K. ii. 4, etc.). Herod the Great resided in J., and beautified it. It was destroyed in the reign of Vespasian, and rebuilt under Hadrian. In the time of the Crusades, it was repeatedly captured, and at last completely destroyed. At the present day, its place is occupied by a miserable village called Richa, or Ericha, with scarcely 200 inhabitants.

JERK, v. *jèrk* [Icel. *hrekia*; Scot. *yerk*, to beat: AS. *gierd*, a rod: W. *terc*, a jerk or jolt]: to thrust out and draw back suddenly; to give a sudden pull or twitch; to move

JERK—JEROME.

with a start or by starts; to throw with a quick, smart, arrested motion: *N.* a short sudden thrust or twitch that shocks or starts; a sudden arrested motion tending to throw or hurl. *JERK'ING*, *imp.*: *N.* act of one who jerks. *JERKED*, *pp.* *jérkt*, twitched; suddenly pushed or thrust. *JERK'INGLY*, *ad.* *-ing-lǐ*, by jerks. *JERK'Y*, *a.* *-ǐ*, coming or moving by starts or by unsteady action.

JERK, *v.* *jérk* [*Peruvian, charqui*, prepared dried meat]: to cut and dry beef in the sun after immersion in sea-water; to cut, as beef, into long thin slices, in order to dry them for keeping. *JERK'ING*, *imp.* *JERKED*, *pp.* *jérkt*: *ADJ.* cut into pieces and dried in the sun, as beef. *JERKED BEEF*, beef preserved by drying in the sun. It is properly called *charqui*, and, like its name, is of Chilian origin, though now made in large quantities in Monte Video, Buenos Ayres, and other places in S. America, where vast droves of cattle on the prairies are available. The beasts are slaughtered when in good condition, and the fleshy parts are dexterously pared off in such a manner as to resemble a succession of skins being taken from the same animal. These sheets of flesh, rarely more than an inch in thickness, being exposed to the sun, dry before decomposition commences, and in that state can be kept almost any length of time. Sometimes the charqui is dipped into brine, or rubbed with salt, before being dried. It is largely imported to Cuba, where it is called *tasajo*, for feeding the slaves. The manufacture of charqui, or jerked-beef, has been introduced into Australia; and 1862, shipments of it were made from Victoria to England, but with small success—though it contains all the nutritive matter of animal food, and could be sold for about twopence per pound. But other forms of preserved meat (see *PRESERVES*) have nearly driven jerked-beef from the English market.

JERKIN, *n.* *jér'kín* [*F. jargot*, a coarse garment worn by country people: *Dut. jurkken*—from *jurk*, a child's pinafore, a short frock or waistcoat]: a sort of jacket.

JER'KIN-HEAD: form of roof which is half-gable, half-hip: the gable generally goes as high as the ties of the couples, above which the roof is hipped off.



Jerkin-Head.

JEROME', King of Westphalia: see *BONAPARTE (JÉRÔME)*.

JEROME' OF PRAGUE: companion of John Huss, whom he surpassed in learning and eloquence, though inferior in judgment and moderation, and moral weight: b. Prague, between 1360 and 70; d. 1416, June 1. After attending the university of his native town, he continued his studies at Paris, Cologne, Oxford, and Heidelberg, and 1399 took his degree master of arts and bachelor of theology. His reputation for learning was so great, that his advice was

JEROME.

taken by Ladislas II., King of Poland, with respect to the founding of the Univ. of Cracow 1410; and Sigismund, King of Hungary, invited him to preach before him at Buda. He entered with his whole soul into the contest of his friend Huss against the abuses of the hierarchy and the profligacy of the clergy. His zeal, however, carried him too far; he publicly trampled the relics under his feet, committed to prison the monks who did not share his opinions, and even ordered one of them to be thrown into the Moldau. When Huss was arrested at Constance, J. hastened to defend him; but receiving no satisfactory answer to a letter in which he had demanded a safe-conduct from the council, he set out on his return to Prague, when he was arrested at Hirschau, 1415, Apr., by orders of the Duke of Sulzbach, and conveyed in chains to Constance. Here he was cast into a dungeon, and placed on trial. After months of rigorous imprisonment, he was brought before a council, and recanted his opinions, especially his agreement with the views of Wycliffe and Huss; but at a subsequent examination, 1416, May 26, publicly abjured his recantation with horror and in the deepest penitence. Four days later he was condemned as a relapsed heretic; and with great firmness and cheerfulness went to the stake. He was burned alive, appealing his cause to the Supreme Judge. J.'s life has been written by Heller (Tübingen 1835) and by Becker (Nördlingen 1858).

JEROME, *jè-rôm'* or *jër'om*, SAINT (EUSEBIUS SOPHRONIUS HIERONYMUS): b. at Stridon, a town whose site is now unknown, on the confines of Dalmatia and Pannonia, between 330 and 342—probably nearer the latter; d. 420, Sep. 30. His parents were Christians. His early education was superintended by his father, after which he studied Greek and Latin rhetoric and philosophy under Ælius Donatus at Rome, where he was also baptized. After a residence in Gaul, he seems to have revisited Rome; but in 370 he had settled in Aquileia with his friend Rufinus. For some unknown reason, he suddenly went hence to the East; and after a dangerous illness at Antioch, which appears to have added to his natural religious fervor, he retired, 374, to the desert of Chalcis, where he spent four years in penitential exercises and in study, especially of Hebrew. In 379 he was ordained priest at Antioch, after which he spent three years in Constantinople in close intimacy with Gregory of Nazianzus; and 382 he went on a mission connected with the Meletian schism at Antioch (see MELETIUS) to Rome, where he resided till 385, as sec. of the pope Damasus, and where, though already engaged in his great work of the revision of the Latin version of the Bible, he attained great popularity and influence by his eloquence, sanctity, and learning. Many pious persons placed themselves under his spiritual direction, the most remarkable of whom were the Lady Paula, and her daughter Eustochium. These ladies followed him to the Holy Land, whither he returned 384. He permanently fixed his residence at Bethlehem 386, the Lady Paula having founded four convents, three for nuns, and one for monks, the lat-

JEROPIGA—JERROLD.

ter of which was governed by J. himself. In this retreat J. pursued or completed the great literary labors of his life; and from these solitudes, all peaceful as they might seem, he sent forth the fiery and vehement invectives which marked not only his controversy with the heretics Jovinian, Vigilantius, and the Pelagians (q.v.), but even with his ancient ally, Rufinus (q.v.), and, though in a minor degree, with St. Augustine. His conflict with the Pelagians rendering even his life insecure at Bethlehem, he was compelled to go into concealment for more than two years; and soon after his return to Bethlehem 418, he was seized with a lingering illness, which terminated in his death. His original works, consisting of letters, treatises, polemical and ascetical, commentaries on Holy Scripture, and his version and revision of former versions of the Bible, were published first by Erasmus, 9 vols. folio (Basel 1516), and have been several times reprinted. The best editions are that of the Benedictines, 5 vols. folio (Paris 1693-1706), and, still more, that of Vallarsi, 11 vols. (Verona 1734-42). St. J. is universally regarded as the most learned and eloquent of the Latin Fathers. His commentaries on the Bible are especially valuable for their learning; but his opinions are often exaggerated and fanciful, and through his controversial writings there runs a strain of violent invective, which contrasts unfavorably with the tone of his contemporary St. Augustine. J. was a bitter disputant, quarreling even with his friends when they refused to follow him in his own changes of opinions.—See VULGATE.

JEROPIGA, n. *jěr'ō-pī'gā* [Port.]: a strong fortified wine of Portugal, containing two-thirds grape-juice and one third spirit, sweetened, and colored with elder-berry juice.

JERQUING, n. *jěr'k'ing* [F. *chercher*, to seek, to search; *chercheur*, a searcher]: the search of a ship by a custom-house officer, called a *jerquer*, to ascertain if there be any concealed or unentered goods.

JERROLD, *jěr'old*, DOUGLAS: dramatist, journalist, and miscellaneous writer: 1803. Jan. 3—1857, June 8; b. London. His early efforts in literature were directed to the theatre, and some of his pieces—*Black-eyed Susan* (1829), for instance—still hold the stage. At a later period he produced several five-act comedies, the best known of which are *Time Works Wonders*, and *The Bubbles of a Day*. J.'s reputation stands more securely on his novels, sketches, and essays than on his dramatic works. His *Men of Character* was originally published in *Blackwood*. He joined the staff of *Punch* (1841), and contributed to that periodical from its second number till within a few days of his death: among his numberless articles were *A Story of a Feather*, *Punch's Letters to his Son*, and the world-famous *Cudde Lectures*. Later appeared *The Chronicles of Clovernook*, the kindest and most delightful of all his books, and *St. Giles and St. James*, his most elaborate novel. For several years before his death, he edited *Lloyd's Weekly Newspaper*,

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whose circulation rose under his editorship from almost nothing to 182,000. He died from disease of the heart at his house in Kilburn Priory, London.

J. was a brilliant, rather than a great, man of letters. His plays are sparkling, but lack body and substance, and uninteresting matter had never perhaps so epigrammatic a setting as in his novels and tales. His invective against social abuses was often overwrought and therefore ineffective; but his satire was inspired not so much by bitterness against the offender as by sympathy with those who suffered under the offence. His reputation as a social wit stands higher than his reputation as a writer. He was greater in society than before his public. Like a flint, every stroke brought fire from him. See *Life and Remains of Douglas Jerrold*, and *Douglas Jerrold's Wit and Humor*; both by his son, William B. J. (Lond. 1858).—WILLIAM BLANCHARD J. (1826–84), son of Douglas J., was a writer for London papers, editor of magazines, and author of novels, sketches, and studies of social life.

JERRY, a. n. *jěr'rĩ* [Gael. *deireas* = *jeireas*, injury, harm, a fraud; *deire* = *jeire*, back, behind]: in *familiar slang*, anything inferior, trashy, or very mean; scamped or unsubstantial workmanship; applied to cheap and very inferior houses run up by speculative builders.

JERSEY, n. *jěr'zĩ*, JERSEYS, n. plu. *-zĩz*: fine woolen yarn as spun in *Jersey*; combed wool; the close-fitting woolen under-shirt worn by athletes; a woolen jacket.

JERSEY CITY.

JERSEY CITY, *jér'zī*: city, cap. of Hudson co. N. J.; on the w. bank of the Hudson river, opposite the s. portion of New York; area $12\frac{1}{2}$ sq. m. The original settlement was laid out regularly in blocks and streets, but the subsequent annexation of the township of Van Vorst (1851), the cities of Hudson and Bergen (1870), and the village of Greenville (1872), has given the whole area a very irregular appearance. The location of J. C. makes it one of the most important cities in the United States. It possesses exceptional facilities for interstate and international travel and commerce, and, independent of its terminal advantages and its intimate connection with New York life and business, has local industries of great value. It is the terminus of the Penn., New York Lake Erie and Western, Central of N. J., New York Susquehanna and Western, Northern N. J., N. J. Midland, Lehigh Valley, New York and Greenwood Lake, and West Shore railroads; is on the line of the Del. Lackawanna and Western, whose terminus is at Hoboken; is directly connected with the New York, New Haven and Hartford and the New York and New England railroads by steam ferry carrying passenger and freight cars, both loaded, to Harlem; and is the e. terminus of the Morris and Essex canal, which connects with the coal regions of Penn. at Easton. The Hamburg-American Packet company, Netherlands-American Steam Navigation company, and the Inman, Red Star (Antwerp), and Thingvalla lines have their ocean steamship docks here; the North German Lloyd and the Wilson line are at Hoboken, which is connected with J. C. by street railroad. The Cunard company occupied docks here for many years prior to removal to New York. Steam ferries connect J. C. with New York at Liberty, Courtlandt, Chambers, Desbrosses, and W. 23d streets, and the railroad companies transport freight in bulk between the two cities on floats holding six cars each, towed by powerful tugs. In 1890 Jersey City had 726 manufacturing establishments, using a capital of \$18,165,094. The chief industries on the basis of capital employed and products yielded were: slaughtering, wholesale (excluding meat-packing), 15 establishments, \$1,197,115 capital, 246 employees, \$248,606 wages, \$10,047,665 materials, \$10,624,859 products; slaughtering and meat-packing, 3 establishments, \$83,875 capital, 51 employees, \$37,030 wages, \$664,501 materials, and \$731,652 products; foundry and machine-shop products, 33 establishments, \$1,744,731 capital, 975 employees, \$675,000 wages, \$787,948 materials, and \$1,822,104 products; chemicals, \$1,060,190 capital, 169 employees, \$142,102 wages, \$1,080,862 materials, \$1,804,339 products; cars and general shop construction and repairs by steam-railroad companies, 3 establishments, \$469,668 capital, 1,628 employees, \$834,122 wages, \$650,298 materials, \$1,484,423 products; silk and silk goods, 7 establishments, \$617,900 capital, 820 employees, \$327,320 wages, \$565,757 materials, and \$1,066,000 wages; soap and candles, 3 establishments, \$1,108,585 capital, 491 employees, \$226,476 wages, \$756,488 materials, and \$1,554,270 products; steam fittings and heating appa-

JERSEY CITY.

ratus, 3 establishments, \$1,032,450 capital, 441 employees, \$302,813 wages, \$391,225 materials, \$858,000 products; lumber, planing-mill products, etc., 8 establishments, \$508,775 capital, 247 employees, \$157,743 wages, \$457,476 materials, \$698,250 products; paints, 4 establishments, \$1,205,338 capital, 230 employees, \$176,429 wages, \$514,239 materials, \$808,613 products; bread and other bakery products, 54 establishments, 258 employees, \$159,691 wages, \$416,157 materials, \$698,699 products; printing and publishing, 11 establishments, \$706,615 capital, 505 employees, \$317,876 wages, \$160,656 materials, \$803,800 products. There are great stockyards at the foot of 6th ave. that cost \$800,000, immense slaughter-houses there and on the Hackensack river; 5 yards for neat cattle and sheep 350x2,400 ft.; three 30,000-pound scales for cattle, and two of the same capacity for sheep at the 6th ave. yards. The hog-slaughtering houses on the Hackensack river, occupying 100 x 800 ft., were burned down 1889, Jan. 26, and soon afterwards rebuilt on the original scale. Other important industries are lumbering, manufactures of boots and shoes, flint-glass, brass castings, carriages and wagons, clothing, confectionery, fireworks, furniture, malt liquors, marble, stone and zinc works, saddlery and harness. In 1900 there were reported 965 manufactories, with a capital of \$80,327,678, employing 19,499 persons and yielding products valued at \$77,225,116.

The water-supply of J. C. is from the Passaic river, total daily capacity being 31,000,000 gals.; there are 180 m. of mains, 240 meters and 1,750 hydrants. The municipal debt (1902), including the water debt, was \$20,064,393. Assessed value of tax. property \$100,550,026; the actual value \$127,000,000. There were (1893) 24 grammar schools, a high school, 4 convents, 2 daily, 4 weekly, and 8 monthly publications. There were five libraries containing 37,000 volumes; there were 4 national banks with capital \$1,100,000, and 3 savings banks with surplus \$600,000. The public buildings are the co. court-house and jail, city hall, city hospital, home for aged women, and children's home. There are 4 public parks, numerous attractive residences away from the business streets, and a number of rich market-gardening tracts in the suburbs. A tunnel beneath the Hudson river to connect J. C. with New York has been in process of intermittent construction for many years, and repeated efforts have been made to induce the legislatures of N. J. and N. Y. to incorporate a company for the construction of a wire suspension bridge over the river, but without avail. In 1889, Oct., plans were made public for a bridge higher and longer than the one connecting New York and Brooklyn, to accommodate steam and street railroads, vehicles, and pedestrians, and to be built largely at the expense of the federal govt. The peninsula on which J. C. stands was contained in a grant from Sir. William Kieft, director-gen. of the Dutch W. India Company, 1638, and under

JERSEY—THE CHANNEL ISLANDS.

the name of Paulus Hook was used for farming purposes for more than 160 years. In 1804 the associates of the Jersey company obtained a charter and attempted to lay out a town. The growth was slow. In 1820 the straggling farming village was incorporated as the City of Jersey with a board of selectmen, and in 1838 it was again incorporated under its present name, and provided with all the features of a municipal govt. It was the first city in the country to manufacture steel, the first to establish a pottery; on its shores was built Fulton's first steamboat, and from them ran the first steam ferry-boat in the world. It was one of the first ports to which came transatlantic steamships, and the terminus of the second railroad built in the United States. As it is a part of the New York customs district, no separate account of its foreign commerce is kept. Pop. (1870) 82,546; (1880) 120,722; (1890) 163,003; (1900) 206,433.

JERSEY, *jér zī* — **THE CHANNEL ISLANDS**: chief island of a group—also the group of islands—in the English Channel, near the coast of Normandy (see **CHANNEL ISLANDS**); geographically pertaining to France, but politically attached to Great Britain; though the numerous islets of the Minquiers and the Chausseys are under French jurisdiction. The other inhabited islands of this group are Guernsey, Alderney, Sark, Herm, and Jethou. The coast is very dangerous, but light-houses are placed on most of the island headlands, and on the dangerous rocks called the Casquets, w. of Alderney. The following table shows area and pop. of the principal islands:

Name of Island.	Acreage.	Pop. 1891.	Pop. 1901.
Jersey.....	29,000	54,578	52,796
Guernsey, Herm and Jethou. .	14,000	35,339	40,777
Alderney	2,000	1,843	2,062
Sark and Brechon.....	1,200	572	506
Total	42,600	92,272	96,141

Physical Geography—Description.—J., 125 m. s.w. of Northampton, 17 m. s.w. of Guernsey, and 16 m. from the coast of France, is oblong, about 10 m. in length and 6 in width. The land is high on the n. coast, and slopes to the s. and e. It is intersected by several small streams. The coast is indented by open bays on the w., s., and e.; but on the n., by small rocky inlets. The interior is mostly tableland, well wooded, especially in the valleys along the winding streams. J. is divided into 12 parishes. The churches have little architectural pretension, but are generally picturesquely situated. The principal town is St. Helier (q.v.). The small neat town of St. Aubin lies at the w. extremity of the bay of that name. It has a diminutive harbor and castle, a good grammar-school, and extensive vineries. Mount Orgueil Castle is a grand and imposing mediæval fortress, looking over Gorey Harbor. Some parts of it are said to be of the time of Julius Cæsar. It was the

JERSEY—THE CHANNEL ISLANDS.

prison of Prynne and the Parliamentarians, and has been used as a barrack. A good view of the island may be obtained from *Hougue Bie*, or Prince's Tower, a building raised on a mound of legendary interest.

For ALDERNEY and GUERNSEY, see those titles.

SARK (*Sercq, Gers*). Great and Little Sark are one island, connected by a natural causeway called the *Coupée*. They are lofty table-lands, with precipitous sides. The total length of the islands and rocks is about five m. the greatest width, including Brechou and the Burons, about three miles. Sark is eight m. from Guernsey. The principal objects of interest are the pierced rocks, caverns, and fissures. The caves are very rich in zoophytes. The inhabitants are engaged chiefly in fishing and lead-mining. There is one parish church, and a lodging house for visitors, etc. The coast is very difficult of access, the only entrance to the interior being through a *creux* or tunnel cut in the rock.

Geology.—Most of the islands are of primary or granite rocks. Alderney is a mass of syenite, with hornblende, porphyry, and occasional sandstone. The structure of Guernsey is hard syenite in the north and gneiss in the south. The geology of Jersey is more varied, presenting a mixture of metamorphic rocks, conglomerates, and sandstones with syenites and quartzites. Shale and blown sand also are prevalent. Sark is of very hard syenite, with veins of greenstone and felspar. Granite is quarried from all the islands, especially from Guernsey, Herm, and Mount Mado in Jersey, both for home use and for exportation.

The scenery of the Channel Islands is exquisitely varied and beautiful; probably few other areas of similar size present such a combination of savage rocks and pleasing landscapes.

The climate of the Channel Islands is agreeable and suitable to invalids. The prevailing winds are from n. and n. west. The mean annual rainfall is 35 inches in Guernsey: but the climate is not overmoist, the soil being porous and evaporation rapid. The mean annual temperature of Jersey is $50^{\circ}8$; of Guernsey, $51^{\circ}5$, or $2^{\circ}5$ warmer than Greenwich. The range of temperature is very moderate; but the climate of Guernsey is rather more equable than that of Jersey. Aug. is the hottest month; Feb. the coldest. Frost and snow are rare. The autumns are beautiful; and a second summer, called the *Petit Etè de Saint Martin*, generally sets in about Oct. 10, and lasts til the middle of December. Flowering plants and shrubs are a fortnight earlier in the spring than in England.

The produce of the islands is principally agricultural; but horticulture and floriculture are successfully followed—the latter especially in Guernsey. The soil is generally light, deep and fertile. The system of cultivation is very primitive. The principal manure is sea-weed gathered in vast quantities from the shores, at certain seasons, under strict regulations. Its annual value to Guernsey alone is

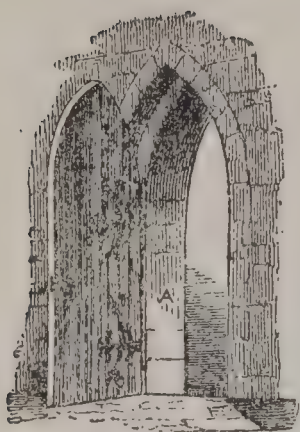
JERSEY—THE CHANNEL ISLANDS.

estimated at £30,000. A great quantity is burned for the manufacture of kelp and iodine.

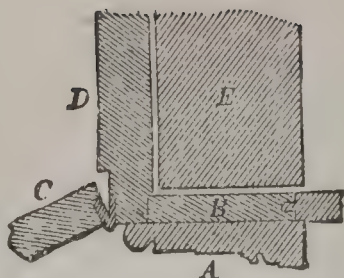
The land is held in small parcels, ranging from 5 to 20 English acres. The principal crops are hay, wheat, turnips, potatoes, mangel-wurzel, parsnips, and carrots. The yield of wheat is more than 30 bushels to the acre—the average of England being 24. The Channel Islands possess an excellent breed of horned cattle, usually known as Alderneys, remarkable for small size and symmetry, and for quantity and quality of milk. From 16 to 17 lbs. of butter are sometimes obtained weekly from the milk of one cow. Fruit is much cultivated in Jersey, especially the vine, and the peach, apricot, plum, apple; and the pear, particularly the Chaumontel, attains extraordinary size and flavor in Guernsey. About 30,000 bushels of table-fruit are annually exported from the islands to London and Paris. Shrubs and flowers flourish abundantly. The Acclimatization Soc. of London receive favorable accounts from the Guernsey branch of the successful cultivation of the Brazilian arum, for the manufacture of arrow-root, the produce being very large and profitable. Vegetables are plentiful; and the cow-cabbage grows to the height of 10 or 12 ft. The other products of the islands are principally fish, viz.: turbot, red mullet, John Dory, conger, *lauçons* or sand-eels, also lobsters and oysters, large quantities of which are exported. A considerable traffic is carried on in granite from all the islands; the blue granite from Guernsey for macadamizing, and the pink syenite from Mount Mado, in Jersey, for paving purposes, are highly esteemed, and largely imported into London. The quantity of granite exported annually from the harbor of St. Sampson averages 125,000 tons.

History—The early history of the Channel Islands is mythical and legendary; but it is probably that the earliest inhabitants were Britons. The islands were under Roman occupation during the 3d and 4th c., the name of Cæsarea or Jersey (Cæsar's Isle) occurring in the Itinerary of the Antonines. Christianity was introduced probably by missionaries from Ireland about 460—St. Helerius being the traditional apostle of Jersey, and St. Sampson of Guernsey. Probably a mixed population of Saxons, Danes, Goths, and Gauls betook themselves to these islands during succeeding centuries, as the Franks possessed the continent. The islands were taken possession of by Rolf or Rollo previous to his invasion of Normandy. After the Norman conquest, the islands were alternately English, under William the Conqueror; Norman, under Rufus; English under Henry I.; and Norman again, under Stephen. With Henry II., the allegiance of the islands reverted to the king, as sovereign of Normandy as well as England; and after the loss of Normandy, the islands remained faithful to England.

The tradition that King John gave a constitution to Guernsey, has not been authenticated. The islands still belonged ecclesiastically to Normandy, the Bp. of Coutances being their diocesan. Edward III. and Henry V. ma-



A, Jamb of Doorway. Quarter.



Jamb and Fittings.
A, Architrave; B, Plowed Ground; C, Door; D, Rabbeted joint; E,



Jerkin-head Roof,
Boscombe, Hants.



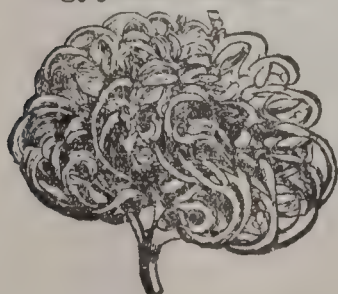
Common White Jasmine.



Jerkin-head.



Egyptian Jerboa.



Jericho Rose.



Jester. Antiquarian Club.

JERSEY—THE CHANNEL ISLANDS.

terially weakened the papal bond; but it was not wholly severed till the Reformation, after which (1658) they were attached to the see of Winchester. In Henry VI.'s time the French held Jersey for six years. During the civil war, Jersey was loyal and Episcopal; Guernsey, republican and non-prelatical; and traces of this divergence are still found. In 1781, during the first American war a French expedition under Baron de Rullecourt, landed in Grouville Bay, and marched into the market-place of St. Helier, but was repulsed with loss by the garrison and militia. During the French and American wars the islanders fitted out many privateers, and obtained rich prizes. Smuggling was finally suppressed 1800. Since the peace, the Channel Islands have thriven and prospered by commerce and agriculture, and especially by becoming the resort of numerous families from England attracted by the beauty of the scenery or the salubrity of the climate.

Antiquities.—Formerly, there were many cromlechs in the islands; the largest remaining are those near Mont Orgueil in Jersey, and at L'Ancrese Bay in Guernsey. A few old chapels of Norman architecture remain. The oldest church in Jersey is that of St. Brelade, said to have been built 1111.

Language.—The vernacular language of the islands is the old Norman-French. It retains its peculiarities of spelling and pronunciation in Guernsey more than in Jersey where the French, and in Alderney where the English, element predominates in the dialect. French, however, is the language used in the law-courts of all the islands; but English suitors may address the court or examine witnesses in English. The church services are in French in the country parishes, but an English service takes place in most of the town churches.

Inhabitants.—The proportion of strangers in Jersey is very large, British being about 13,000, French 2,000; the native population about 41,000, nearly all of whom live in the country. The natives are generally frugal and independent. Society is much divided into cliques; the 'sixties' and 'forties' in Guernsey are a marked division.

Government and Laws.—Though belonging to the British crown, the islands have a certain independent *status* and action. The principal officer in each island is the *lieutenant-governor*, who is a general officer in the army, and supreme in all military matters; but he has also certain civil and municipal duties. In Jersey especially, his civil jurisdiction is very extensive. He continues in office five years.

The *bailliff* or judge is the first civil officer in each island. He also is appointed by the crown, generally for life. He presides at the royal court, and has a casting vote in civil and criminal cases. He originates all measures proposed to the 'states,' and represents the crown in all civil matters. The jurats are 12, elected in Jersey by suffrage of ratepayers, for life. They sit in all the courts, and have a voice in all deliberations: in Guernsey, they are elected by the elective states. The rectors of the different parishes

JERSEY—THE CHANNEL ISLANDS.

also have a seat in all councils: in Guernsey, however, only eight out of ten have a vote. Besides these officers, there are an attorney and a solicitor gen. in each island, and a high-sheriff, called in Jersey the *vicomte*, and in Guernsey, the *prévôt*.

The other members of the 'states' or assemblies are, in Jersey, the *constables* of 12 parishes and the 14 *deputies* of the *vingteniers*, elected from the *vingtaines* of each parish. The *royal court* on each island consists of the bailiff and jurats. The 'states,' not convenable without the consent of the gov., pass *ordonnances*, in force for three years; laws intended to be permanent must be submitted to the sovereign. The lieut gov. has a *veto* on all questions deliberated.

In Guernsey, the 'Deliberative States' consist nearly of the same body, but there are also the 'Elective States,' a more popular assembly, amounting to 222 persons—the great majority being 200 *douzaniers*, elected by the rate-payers of the various parishes. The *douzaniers* (originally 12 from each parish) are managers of all parish matters, and elected for life. The bailiff presides. The lieut.gov. has no veto, and *ordonnances* passed take effect without the royal approbation. The proceedings of the states relate to the internal administration of the islands.

Alderney and Sark, though possessing courts of their own, and jurisdiction in petty offenses, are, with the smaller adjacent islands, under the bailiwick of Guernsey.

The *laws* of the islands are very peculiar, being mainly derived from the ancient customary law of Normandy. The laws relating to property are singular: arrest takes place in Jersey without proof or affidavit. Until recently, the queen's writ had no power in the islands, and the act of *Habeas Corpus* has only lately been admitted. Encroachments on property are sometimes met by a curious appeal called *Ha! Ro! à l'aide, mon Prince!* repeated thrice. It is considered to be the remains of an old appeal to Rollo, Duke of Normandy, and is still a valid form of injunction.

Ecclesiastical State.—There is a dean in each island. The livings are in the gift of the crown, and of small value. The principal educational establishments are Victoria College in Jersey, and Elizabeth College in Guernsey. In both, a first-class education is given on very moderate terms, by an excellent staff of teachers, and they have various exhibitions at Oxford and Cambridge.

St. Helier is the capital of Jersey, and St. Peter of Guernsey. St. Anne is a small town in Alderney. There is regular steam-communication between England and the Channel Islands, also between Jersey and the French ports of Granville and St. Malo.

The islands are protected by numerous forts, especially about the harbor of refuge in Alderney.

Books of Reference.—The principal historical authorities are the Rev. P. Falle's *History of Jersey*; Mr. Duncan's and Mr. F. B. Tupper's *Histories of Guernsey*; and Pegot-Ogier, *Histoire des Iles de la Manche* (1881). A very comprehensive work is *The Channel Islands*, by Ansted and Latham (1862). See also Victor Hugo's (brilliant but not very serviceable) *L'Archipel de la Manche* (1883).

JERUSALEM.

JERUSALEM, *jê-rô'sa-lêm* [Heb. *Yerushalem*, Gr. *Hierousalem*, Lat. *Hierosolyma*; called also in Arabic *El-Khuds* or *El-Kods*, 'the Holy']: Jewish capital of Palestine. Its original and early history are very obscure, Josephus (*Antiq.* i.x.2) identifies it with the 'Salem' of which Melchizedek (Gen. xiv. 18) is called king; but St. Jerome doubts this. Critics are better agreed as to the identity of J. with Jebusi, the city of the Jebusites (Josh. xviii. 28), and we know that the Jebusites retained possession of the strong positions of the hill of Zion for a considerable time after the conquest of Canaan, and even after the storming of J. (Judg. i. 8), while the tribes of Judah and Benjamin occupied the lower city. They were finally dispossessed by David (II K. v. 7). The name J. is first mentioned Josh. x. 1. The city is on the original border of Judah and Benjamin, the line of which runs through the valley of Hinnon; so that Zion and the northern city lay within the territory of Benjamin. Its historical importance dates from the time of David, who there fixed his residence, calling it by the name of the 'City of David,' transporting to it the ark of the covenant, and building in it an altar to the Lord, on the place of the apparition of the angel by which the plague was stayed (II K. xxiv. 25). The building of the temple under Solomon was the consummation of the dignity and holiness of J.; and the city was further enlarged, strengthened, and beautified by this king and by his successors. It suffered a diminution of political importance through the revolt and secession of the Ten Tribes, from which date its history is identified with that of the kingdom of Judah. It was pillaged (B.C. 973) by Sesac (Shishak), King of Egypt (II Chron. xii. 9), by Jehoash, King of Israel (II K. xiv. 13, 14); and finally (B.C. 588), it was taken, after a siege of three years, by Nabuchodonosor, who razed its walls, and destroyed the temple and palaces by fire (II Kings xxv.). Having been rebuilt after the Captivity (B.C. 536), it was again taken and pillaged under Ptolemy Lagos (B.C. 320), and under Antiochus Epiphanes (B.C. 161), after the well-known and mysterious repulse of Heliodorus (B.C. 176); and Pompey (B.C. 63) took the city on the anniversary of its capture by Nabuchodonosor, put 12,000 of the inhabitants to the sword, and razed the walls to the ground, sparing at the same time the treasures of the sanctuary. However, a few years later, they were pillaged (B.C. 51) by Crassus; and from these beginnings dates the continued series of Roman aggressions, which terminated in the complete destruction of the city and dispersion of the Jewish race, under Vespasian and Titus (A.D. 70). From the description of the contemporary historian Josephus, we learn that at this period, J., which, occupied the four hills Zion, Acra, Moriah, and Bezetha, (separated from each other by deep valleys or gorges), consisted of three distinct regions—the Upper City, with the citadel of Zion: the Lower City, to the n., on the hills of Acra and Moriah; and the New City still further northward. The temple stood on the hill of Moriah, and John

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Hyrcanus built, on the n.w. angle of this hill, a fortress called Baris, which was strengthened and beautified by Herod, and called 'Antonia,' in honor of Mark Antony. Herod's own palace stood at the n. extremity of the Upper City, and on the e. angle was an open place called Xystus, surrounded by galleries, and communicating by a bridge with the temple. The environs of the city were adorned with gardens, parks, ponds, and tombs. In the progress of ages, ancient J. was surrounded by three walls, the direction of which, in some portions of their course, is difficult to be determined, though it is on this that the controversy as to the authentic site of the Holy Sepulchre (see HOLY PLACES—HOLY SEPULCHRE) mainly turns. The first and most ancient wall surrounded the Upper City on the hill of Zion, and joined on its n. side the prodromum of the temple. The second wall, or the wall of Ezechias, inclosed the hill Acra, around which stood the Lower City. It was connected at the s.w. angle with the first wall, from which it ran in a semi-circle to the n. and n.e., surrounding the Upper City till it joined the fortress Antonia, described above. The third wall, built by Herod Agrippa, which inclosed the hill Bezetha and the so-called New City, appears to have started from the n.w. angle of the first wall, probably at the tower called 'Hippicus,' and to have taken a n. and n.e. direction around the New City till it met the n.e. angle of the temple wall. It thus, for a part of its course, was external to the second wall. The site of the Church of the Holy Sepulchre and the Hill of Calvary are thus supposed, by the defenders of their authenticity, to have been without the wall of J. as it stood in the days of our Lord—that is, the second wall, though they were taken in by the extension of the city a short time afterward, when the third wall was built at some distance to the w. of the second, by Herod Agrippa. The investigation of the exact direction of the second wall has long been an object of desire with biblical antiquaries, and it is probable that the excavations now projected or in progress will remove much uncertainty.

The city destroyed by Titus was rebuilt by Hadrian ; but only as a heathen and Roman city, under the name *Ælia Capitolina*, with a temple of Jupiter ; not as the capital of the Jewish race, who were forbidden, under pain of death, to visit it. Constantine, under the inspiration of his mother Helena, took measures to consecrate and perpetuate its Christian memories by ascertaining the sites of the various events in the Passion of our Lord, and erecting on them churches and other suitable memorials of those scenes of the redemption of the world, which thenceforward became an object of pious veneration to pilgrims from every part of the church. On the contrary, Julian the Apostate, with the design, according to the contemporary Christian account, of falsifying the prediction of our Lord, that 'not one stone should be left upon another,' encouraged and assisted the Jews to return and rebuild their ancient capital ; an enterprise which, as the same writers—supported, in most respects, by the pagan historian Ammianus Marcel-

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linus (xxiii. 1)—affirm, was frustrated by an earthquake or eruption, which the Christians ascribed to divine interposition.

J. again fell under foreign domination 614, when it was stormed by the Persian king, Chosroes II. It was restored to Emperor Heraclius 628 ; but 637 it fell into the hands of the Caliph Omar, and in 1077 passed under the Turkman domination. During this long period, the practice of pilgrimages to J. was never entirely interrupted. In consideration of a tribute paid by each Christian visitor, a contemptuous permission was accorded for the purpose ; but the cruelties practiced on the pilgrims by the Turks being reported in the West, and especially by the fiery enthusiast Peter the Hermit, aroused the piety and chivalry of Europe, and led to that extraordinary succession of ' holy wars ' which for a time restored the tomb of the Lord Jesus and the holy city to Christian hands. 1099, July 15, J. was taken by assault, and was declared the capital of a Christian kingdom. Through a rapid succession of undistinguished names, with the exception of the first, the celebrated Godfrey of Bouillon, the new sovereignty was precariously maintained until 1187, when it fell once more before the arms of the great Saladin, since which time—if we except the brief and empty pageant in which Frederick II., Emperor of Germany, having assumed the title by a collusive treaty with the sultan, entered into J. 1229, March—the city can hardly be said to have known other than Moslem rulers. It was retaken by the Sultan of Damascus 1239 ; and though it was given up 1241 to the Knights Hospitallers, they were driven out 1244 by the Chorasmanian Turks, by whom the ascendancy of the Crescent was finally established. It was captured from the Saracens by the Mamelukes 1382, but recovered in 1517 by Sultan Selim, whose son, the celebrated Soliman, built the wall which at present incloses the city. J. is now the seat of a pasha, with the ordinary powers of a Turkish viceroy.

It remains to describe the present condition of the city. It is in $31^{\circ} 46' 45''$ n. lat., $35^{\circ} 13' 25''$ e. long., on an elevation 2,000 ft. above the Mediterranean, from the nearest point of which it is distant 29 m. east. In its present shape, it is an irregular square, and is still surrounded by the embattled wall, about $2\frac{1}{2}$ m. in circumference, erected by Sultan Soliman. The modern inclosure, however, is far from coinciding with that of the Jewish period. In addition to the changes produced by the rebuilding of the city under Hadrian, by which the greater part of the region anciently called the New City was excluded, the stream of population in the Christian period having flowed toward the Holy Places, the modern city has extended considerably toward the west. The four hills on which the ancient city stood are inclosed within the modern precincts; but the portion of the old city which lay n. of Bezetha is now excluded, and the valleys between the hills having been filled up by accumulation of ruins ever since the time of Nehemiah (Neh. iv. 10), little inequality of surface is now observable. The depth of the debris averages 30 to 40 ft.

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in all the town; in the valleys it is 70 ft. in depth, and in one place the rock has been reached only by a shaft 120 ft. deep. The streets are narrow, unpaved, and irregular, and the houses gloomy and unsymmetrical; though owing to its striking position, especially when viewed from the e., and to the number of minarets and domes which rise above the level of the flat-roofed houses, the general appearance of the city, seen from without, is picturesque and pleasing. There are seven gates, of which the principal are the Jaffa Gate, the Damascus Gate, the Stephen's Gate, and the Zion Gate. If lines be drawn between these four gates, the city will be divided into four parts, which almost coincide with the four quarters into which the population—Christian, Armenian, Jewish, and Moslem—is divided; the Christians occupying the n.w., the Armenians the s.w., the Jewish the s.e., and the Mohammedans the n.e. quarters within the wall. To all alike, the city is the seat of many sacred associations. The Jews have 14 synagogues. The Mohammedans, since the days of the first occupation, have held possession of the site of the Temple of Solomon, on which the so-called Mosque of Omar now stands; and the pasha's Seraiyah, or official residence, occupies the site of the Tower Antonia. The Church of the Holy Sepulchre (see HOLY PLACES), with its inclosure, is occupied by all the Christian communities in common. The Latins possess, for their own worship, the Church of St. Saviour; it is attached to the Franciscan convent, in which Europeans of all denominations receive ready hospitality. In like manner, the Greeks, Armenians, Syrians, Copts, and Abyssinians have convents or hospitals appropriated to their several communions. That of the Armenians on Mount Zion is said to be one of the richest in the east; and the same communion possesses another convent on the reputed site of the house of Caiaphas. The street leading from the Eastern or Stephen's Gate to the Holy Sepulchre is called the *Via Dolorosa*, and is believed to follow the route of our Lord's sorrowful procession from the Hall of Judgment to Mount Calvary. In other parts of the city or its immediate environs, are shown the reputed sites of the Mount of Olives, the Tomb of the Virgin, the Pool of Bethesda, the Potter's Field, and the sites of almost all the events of the Passion of our Lord or of scenes connected therewith. The authenticity of these sites has been the subject of considerable controversy in later times: see HOLY PLACES. Beyond its religious associations, the modern city has few advantages. It is without industry except the manufacture of soap and of *Jerusalem ware*, viz., chaplets, crucifixes, beads, crosses, etc., made of mother-of-pearl or wood, and sold to the pilgrims, who number 6,000 to 8,000 annually. For the use of the Mohammedan pilgrims—for whom the Mosque of Omar is inferior in sacredness to only Mecca and Medina—amulets of black stone are made. Captain Wilson of the Ordnance Survey 1866 executed trustworthy plans of J. and environs; Colonel Warren made extensive excavations 1867-70; further explorations were made by Lieut. Conder, 1872-75.

JERUSALEM ARTICHOKE.

In ecclesiastical history, J. has not filled the space which might have been expected. When the city was rebuilt after its destruction under Titus, the new city Ælia was so inconsiderable as a Christian community, that it became a suffragan see of the metropolitan of Cæsarea. The Council of Nice recognized a precedence of honor; but it was not till the Council of Chalcedon that the church of J. was raised to the rank of a patriarchate, with jurisdiction over all the bishops of Palestine. J., however, ranked last among the eastern patriarchates. In common with the other eastern churches, J. followed Constantinople in its secession from the West. The patriarch of J. was a party to the decree of union in the Council of Florence; but his flock soon fell back into schism; and though the titular rank of patriarch of J. has been maintained in Rome, the church remained under the care of the Franciscan community, and the Latin patriarch had never resided in J. until the accession of Pope Pius IX., by whom the duty of residence was re-established. In 1841, the governments of England and Prussia united for the establishment of a Prot. bishopric in J., the appointment to which rests alternately with England and with Prussia.

The pop. is increasing, mostly by Jewish accessions. The city contained (1897) about 40,000 inhabitants, of whom about one-half were Jews, about one-quarter were Moslems, and the rest Christians of various sects.—See Robinson's *Biblical Researches*, Stanley's *Sinai and Palestine*, Williams's *Holy City*, Richardson's *Travels along the Mediterranean*, Ritter's *Erdkunde*, Sepp's *Forschungen eines Deutschen Reisenden*; on the Patriarchate, Le Quien's *Oriens Christianus*, Mosheim's *Church History*; and in regard to recent exploration, Captain Warren's *Underground Jerusalem*.

JERUSALEM ARTICHOKE, *jé-ró'să-lēm ár'tě-chōk* [a corruption of It. *girasōlè*, sun-flower or turnsole—from It. *irare*, to turn, L. *gyrārē*, to turn round; It. *sole*, L. *sol*, the sun: Eng. *artichoke*]: called also *Topinamburi* (*Helianthus tuberosus*): plant of nat. ord. *Compositæ*, and of the same genus with the common Sunflower (q. v.); native of Brazil. The name artichoke is merely from a supposed similarity of flavor in the eatable part—the tuber—to the artichoke. The J. A. has straight simple stems 8 to 12 ft. high, and many rough ovate, acute, stalked leaves; and in the end of autumn, produces yellow flowers resembling those of the common sunflower, but smaller. The thick, fleshy, and knotted perennial root produces, closely around it, oval or roundish tubers, sometimes 30 or 50, which are reddish on the outside, and whitish within, in appearance very similar to potatoes. They have a sweetish, mucilaginous taste when boiled, and are much more watery and less nourishing than potatoes. They are, however, very palatable, when properly prepared with sauce, and make good soup. The plant is useful also for fodder for cattle which is yielded by its leaves and the more tender parts of the stems. The fibre of the stems may probably be found valuable for paper-making. The stems and leaves contain much nitre, and have been used for making potash. The J. A. is to a

JERUSALEM CHAMBER—JERUSALEM CHERRY.

small extent an agricultural crop in parts of Europe. It is generally propagated by small tubers, or cuttings of tubers,



Jerusalem Artichoke (*Helianthus tuberosus*).

like the potato; and its cultivation is in most respects similar, though the aspect of the plant is very different.

JERU'SALEM CHAM'BER: room in Westminster Abbey, London, in which the sessions of the Westminster Assembly were held 1643, where also the bishops debated the final alterations in the Book of Common Prayer 1662, and where a number of the most exciting scenes connected with the history of the Convocation in the reigns of William III. and Anne occurred. The Westminster Assembly was constituted in the chapel of Henry VII., and held its meetings there till after the arrival of the Scotch commissioners, when on account of the chill of the room in the approaching winter weather it removed to the J. C. that it might have the benefit of a fire.

JERU'SALEM CHER'RY: name of two species of *Solanum*, *pseudo-capsicum* and *capsicastrum*, largely cultivated as house-plants for their ornamental character. The first is the oldest form, having been introduced into England from Madeira about 1596, and has stalks 1 to 2 ft. high; the second is a dwarf about half the height of the first. Both are propagated from seeds or cuttings, and bear orange-colored berries about the size of common cherries. A highly cultivated third form, *hybridum*-

JERVIS—JESHURUN.

compactum, is much used in England as a table decoration. The origin of the name is unknown.

JERVIS, *jér'vīs*, JOHN, Earl of St. Vincent: British admiral: 1734, Jan. 9—1823, Mar. 13. He obtained a commission in the navy as lieutenant 1755, and commanded the *Alarm* frigate in the Mediterranean 1769. He was appointed to the *Foudroyant*, finest two-deck ship in the British navy, and engaging the *Pégase*, 74 guns, off Brest, he took her without the loss of a man. For this exploit, he was made K.C.B. In 1787, he was made rear-admiral; in 1793, he commanded the naval part of the expedition against the W. India Islands, Sir C. Grey commanding the troops; and so successful was this expedition, that though the French were well prepared, and fought desperately, every island fell in succession into the hands of the British. In 1795, he received command of the Mediterranean fleet. 1797, Feb. 14, with only 15 sail of the line, he fell in, off Cape St Vincent, with the Spanish fleet of 27 sail. Without hesitation, J. engaged the enemy; and the battle of St. Vincent was fought. The genius of Nelson, however, contributed greatly to the success of the day. For this victory, the king created J. Earl St. Vincent, and parliament settled on him a pension of £3,000 a year. After having, by great firmness, repressed a mutiny off Cadiz, which threatened the loss of the whole fleet, he was compelled by ill health to return home. After having held the appointment of first lord of the admiralty, and for a second time commanded the Channel fleet, he retired into private life. A public monument was erected to his memory in St. Paul's Cathedral. History has enrolled the name of St. Vincent in the first rank of the eminent naval commanders who broke the maritime power of France and Spain, and established the naval supremacy of Great Britain.

JERVIS, *jér'vīs*, JOHN BLOOMFIELD, LL.D.; 1795, Dec. 14—1885, Jan. 12; b. Huntington, N. Y.: engineer. He was employed in the construction of the Erie canal, and subsequently superintended the survey and construction of the Del. and Hudson canal, invented the locomotive truck, and was chief engineer of the Albany and Schenectady and Schenectady and Saratoga railroads. In 1833 he became chief engineer of the Chenango canal, 1835 was employed to make estimates and surveys for an enlargement of the Erie canal, 1836 was appointed engineer in charge of the construction of the Croton aqueduct, 1846–8 was consulting engineer of the Boston waterworks, 1851 became engineer of the Chicago and Rock Island railroad, 1854 its pres., and was afterward connected with the Pittsburg Fort Wayne and Chicago railroad. He published *Description of the Croton Aqueduct* (New York, 1842); *Report on the Hudson River Railroad* (1846); *Railway Property* (1859); *The Construction and Management of Railways* (1861); and *Labor and Capital* (1877); and received the degree LL.D. from Hamilton College 1878.

JESHURUN, *jěsh'ū-rŭn* (mistakenly *Jesurun*): symbolical name for Israel, in Deut. xxxii. 15; xxxiii. 5, 26; Is.

JESI—JESSULMERE.

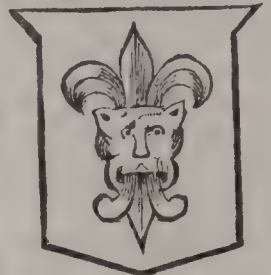
xliv. 2. Some Hebraists give it the signification 'the upright'; others, 'the blessed'—referring to Israel either as worshippers of the true God, or as prospered by Him.

JESI, *yā'sē*, or IESI, *ē-ā'sē* (anc. *Æsium*, or *Æsis*): prosperous manufacturing town of central Italy, province of Ancona, 15 m. s.w. of the city of Ancona, on the left bank of the river Esina. It is surrounded by walls, has a cathedral, and several other churches and convents. It has manufactures of paper, silk, and woolen hosiery and linen, and a large trade in wine and olives. J. was the birthplace of the German emperor Frederick II. Pop. 12,118.

JESS, n. *jěs*, JESSES, n. plu. *jěs'ěs* [OF. *gect*, or *ject*, a jess—from *jecter*, to cast or hurl—from L. *jactāre*, to hurl: It. *geto*, a jess (see JET 1)]: in *hawking*, a strap of leather tied about the leg of a hawk, having little rings for the leash, by which it is held on the fist.

JESSAMINE, n. *jěs'sā-mĭn*: the jasmine (q.v.).

JESSANT, *jěs'ant*, in Heraldry: springing forth, frequently synonymous with *issuant*, rising, as a demi-lion is often represented doing, from the bottom line of a field, or upper line of an ordinary. Jessant is sometimes used improperly for *naissant*, or rising from the middle of an ordinary. The phrase *jessant-de-lis* is used with respect to a strange heraldic device representing a leopard's head *affronté* with a fleur-de-lis passing through it.



Jessant-de-lis.

JESSE, n. *jěs'sē*: the large branched candlestick formerly used in churches, so called as resembling the genealogical tree of *Jesse*, the father of David, a picture of which was formerly hung in churches; the same represented in sculpture or stained glass. JESSE-WINDOW, in *arch.*, a window of which the tracery and glazing represent a genealogical tree of Jesse. There is a noted one at Dorchester, Oxfordshire, England.

JES'SO: see Yesso.

JESSORE, *jěs-sōr'*: town of Bengal Proper, cap. of the dist. of J.; 77 m. n.e. of Calcutta. Here, 1838, was erected by the zemindars of the neighborhood, a commodious school, in which instruction is given in English, Persian, and Bengali. The residence of the Rajas of J. is at Chánchrá, a mile distant.—The *district* of Jessore has 2,276 sq. m. Salt is obtained from the southern frontier; and sugar and rum are largely prepared from the sap of the palm-tree. Pop. (1891) town 8,300; dist. 1,888,827.

JESSULMERE, *jěs-ŭl'mēr'*: fortified city of Rajputana, cap. of the protected state of J.; contains about 35,000 inhabitants; lat. 26° 56' n., and long. 70° 58' e., 1,290 m. n.w. of Calcutta. It has several Jain temples, and various tanks and wells.—The *state* of Jessulmere has 16,447 sq. m.. (1891) 115,364 inhab. The country is poor and sterile,

JEST—JESUIT.

and the public revenue is about £10,000. Pop. (1881) city abt. 35,000; state 108,143.

JEST, n. *jèst* [L. *gestus*, done, as a feat or deed, then applied to the relation or story of it: L. *gestu*, in mid. L. *Gesta Rōmānōrūm*, a celebrated collection of stories published in the 14th c., then an amusing story, and finally a joke: OF. *geste*, an exploit, a tale: OE. *gestour*, a narrator of stories: Icel. *gis*, jeering, bantering—*lit.*, a deed or act, and then a narrative of such]: something ludicrous, or only intended to excite laughter; joke; fun; the object of jest or laughter; something said in joke or raillery, not in earnest: V. to divert by words or actions; to utter untruth or exaggeration in play or diversion; in *OE.*, to play a part in a masque. **JEST'ING**, imp.: **ADJ.** having the character of a jest or sarcasm: N. talking for diversion or merriment; the making merry by words or actions. **JEST'ED**, pp. **JEST'ER**, n. *-ér*, one given to merriment and pranks; a buffoon; a merry-andrew. **JEST'FUL**, a. *-fúl*, full of jokes. **JEST'INGLY**, ad. *-lī*, not in earnest. **IN JEST**, not in earnest; in mere sport and diversion.—**SYN.** of 'jest, n.': sport; raillery; burlesque; diversion.

JESUATE, n. *jěz' ū-āt* [so called from the frequency with which the order pronounced the name of Jesus]: in *chh. hist.*, name ultimately given to a monastic order, which, when first founded, 1368. was called Apostolic Clerks.

JESUIT, n. *jěz' ū-īt* [F. *Jésuite*; Sp. *Jesuita*, a Jesuit—from *Jēsūs*]: member of the order or society of *Jesus*, founded by Ignatius Loyola 1534; a religious order in the R. Cath. Chh. renowned for the zeal, learning, and address of its members: hence, an intriguer; a crafty person. **JES'UIT'IC**, a. *-īt'ík*, or **JES'UIT'ICAL**, a. *-ī-kál*, pertaining to the Jesuits; crafty; deceitful. **JES'UITICALLY**, ad. *-lī*. **JES'UITISM**, n. *-īt-izm*, or **JES'UITRY**, n. *-īt-rī*, the principles and practices of the Jesuits; cunning; deceit; hypocrisy. **JESUIT'S-BARK**, *Cinchona*, which see.

JESUITS.

JESUITS, or SOCIETY OF JESUS: celebrated religious order of the Rom. Cath. Church, which has filled a large space in the ecclesiastical and even the political history of the world. It was founded 1534, by Ignatius of Loyola (see LOYOLA), in concert with five associates.—Peter Le Fevre, a Savoyard; three Spaniards—James Lainez, Francis Xavier, and Nicholas Bobadilla; and a Portuguese named Rodriguez. The original object of association was limited to a pilgrimage to the Holy Land, and a mission for the conversion of infidels; but as all access to the Holy Land was precluded by the outbreak of a war with the Turks, the associates turned their thoughts to a more comprehensive organization, specially designed to meet those modern requirements which had arisen since the Reformation. With this view, Ignatius of Loyola, with Lainez and Le Fevre, having meanwhile recruited several new associates, repaired to Rome 1539, and submitted to the pope, Paul III., the rule of the proposed order, the great aim of which was expressed in their adopted motto: *Ad maiorem Dei Gloriam* (To God's greater glory); and the vow of which, in addition to the threefold obligations common to all Rom. Cath. religious orders, of chastity, poverty, and obedience, comprised a fourth, whereby the members bound themselves unreservedly to go as missionaries to any country which the pope might indicate to them. The new rule was approved by a bull 1540, Sep. 27; and in the following year, the association was practically inaugurated at Rome, by the election of Ignatius of Loyola as its first general.

The original constitution of the society has undergone so few modifications that it may be described without specifying these changes. Although it is usually represented as absolutely monarchical, yet the authority of the general is in many respects, strictly limited. It is true, that the general—elected by a congregation of professed members selected for the purpose by the whole body of professed members in the various provinces—holds his office for life; and that though aided in his government by a council of five assistants from the five chief provinces, he is not obliged to follow their voice, even when unanimous. But, on the other hand, he is strictly bound by the constitutions of the order; nor, though he may dispense in particular cases, is he competent, of his own authority, to annul or alter any of their constitutions. In like manner though no instance of deposition has ever occurred, he is liable to be deposed by the sentence of a general congregation, in certain contingencies specifically pointed out by the constitutions.

The body over which this general presides consists of four classes: 1. Professed, who, having passed through all preparatory stages, which commonly extend over 10 or 12 years, or even longer, have solemnly taken the vows described above, including that of obedience to the pope. It is from this class alone that the general and all the higher officials of the society are chosen. 2. Coadjutors, spiritual and temporal; the spiritual—who have completed their studies, and have (seldom before their 32d year, or

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even later) been admitted to holy orders—being designed to assist the professed in preaching, teaching, and the direction of souls; the temporal being lay-brothers, to whom the minor and menial offices of the society are assigned. 3. Scholastics, who having passed through the novitiate, are engaged for a long series of years, either in pursuing their own studies, or in teaching in the various schools of the order. 4. Lastly, novices, who, after a short trial as ‘postulants’ for admission, are engaged for two years exclusively in spiritual exercises, prayer, meditation, ascetic reading, or ascetic practices, and generally in a course of disciplinary training. The administrative and executive government of the society, throughout the various provinces or countries into which it is divided, is intrusted, under the general, to provincials, who are named by the general, and hold office, as do all the other officials, for three years. In each separate province, there are three kinds of communities—professed houses or residences, colleges, and novitiates. Not only the superiors of these houses—who are called by different names—but also all the various office-bearers in each, are appointed by the general, who receives at stated intervals—monthly from provinces, quarterly from colleges and novitiates—a detailed report of the character, conduct, and position of each member of the society. In all these gradations the subordination is complete, and the obligation of obedience is immediate and unreserved; and one of the most familiar accusations against the society is, that this duty of blind and implicit obedience makes the superior the sole and final arbiter of conscience for all his subjects, the judge of good and evil, of virtue and of vice. Nevertheless, whatever may be said of the practical tendency of this relation, the J. and their apologists plead that, both in the rules of St. Ignatius and in the so-called ‘examen’ of the candidate, there is contained, in the duty of obedience to a superior, an explicit reservation for the subject, ‘unless where the superior should command what is sinful.’

Such is the internal organization of this renowned association. The system of training applied to the formation of its members evinces the most profound knowledge of the human heart, and the most correct appreciation of the religious instincts and impulses of mankind. The long exercises of the novitiate were designed by Ignatius to form the individual character in habits of personal holiness, and practices of personal piety. It was the business of the school and college to form the social character of the future teachers of men, and directors of the destinies of society. To a learning carefully adapted to the actual condition and progress of knowledge, they sought to add manners and habits calculated to inspire confidence, and to disarm prejudice and suspicion. Unlike the older orders, they made no parade of a special calling, whether by a peculiar habit, or by peculiar exterior indications of austerity or asceticism. They enjoyed, indeed, in these respects, some exemptions from the more austere practices of other orders. Their churches were designed but as sup-

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plementary to those of the parish clergy (whose ordinary costume they adopted as their own conventual dress), without the canonical services, without much imposing or attractive ceremonial, being appropriated chiefly for religious instruction, and for the duties of the confessional. Their casuistry avoided all harsh and excessive rigor; and it cannot be doubted that some of their writers carried it to the opposite extreme. But above all, they addressed themselves to the great want of their time—education; and through the mastery which they soon obtained in this important field, as well as their eminence in every department of learning, divinity, philosophy, history, scholarship, antiquities and letters, they attained unbounded influence in every sphere of society. It may be added that to their extraordinary success in thus drawing to themselves, for education, the youth of every country into which they were introduced, the historians of the society ascribe much of the opposition which they encountered from the universities and collegiate bodies whose monopolies they invaded.

The organization of the society is settled, in every important particular, by the original rules and constitutions of St. Ignatius. The opponents of the J., however allege that, in addition to these public and avowed constitutions, there exists in the society, for guidance of their hidden actions, and for private direction of the thoroughly initiated members, a secret code, entitled *Monita Secreta* (Secret Instructions), which was meant to be reserved solely for the private guidance of the more advanced members, and which was not only not to be communicated to the general body, but was to be boldly repudiated by all, should its existence at any time be suspected or discovered. This singular code, a master-piece of craft, and duplicity, was printed first at Cracow 1612, and has been repeatedly reprinted by the enemies of the J.; but it is indignantly disclaimed by the society. The accounts of the time and circumstances of its discovery are suspicious and contradictory. The book has been repeatedly condemned, both at Rome and by other authorities, as well as by the society, and its apocryphal character is now commonly admitted (see Barbier, *Dictionnaire des Anonymes*).

The history of the society is so varied, in the different countries, that it is necessary to allude to each separately, dividing it into three stages—the rise, the suppression, and the restoration of the order.

In Italy, its early career was brilliant and unclouded. Before the death of the first general, Ignatius, 1556, the Italian J. had swelled to 1,000 in number, and the order was established in 12 provinces. Their first check in Italy occurred in Venice. In the contest of this republic with Paul V. (q.v.) the J., taking the side of Rome, accepted, 1606, the alternative, proposed by the senate, of leaving the Venetian territory; nor was it till 1656 that they were re-established in Venice, from which time they held undisturbed influence in Italy until the suppression of the order.

The earliest settlements of the J. outside of Italy were

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in Portugal and Spain. In 1540, Rodriguez—Portuguese nobleman—and Francis Xavier opened colleges in Portugal, at the invitation of the king. Francis Borgia, Duke of Gandia, in Spain, was equally well received in his native country, where the order flourished so rapidly, that, at the time of the suppression, the Spanish J. numbered above 8,000.

In France, though a house for novices was founded in Paris by St. Ignatius 1542, the Univ. of Paris opposed their introduction as unnecessary, and irreconcilable with its privileges. They were distasteful to supporters of the Gallican liberties, and still more to the Huguenots. The jurists, the parliament, and the partisans of absolutism, were alarmed by the free political opinions which had found expression in some of the Jesuit schools. On the other hand, the democratic party attributed to them a sinister use of their influence with courts. And thus their progress in France was slow, and their position at all times precarious. It was with much difficulty that the parliament of Paris consented to register the royal decree which authorized their establishment. In more than one instance the university protested against their schools as invading its privileges. In the wars of the League, they made new enemies; and at length the assassination of Henry III. by Clement (although no evidence of any connection with the J. appeared in his case), and the circumstance, still more industriously urged against them, that Chatel, who attempted the life of Henry IV., had at one time been a pupil in their schools, led to their expulsion from France 1594. They were reinstated, however, 1603; but on the assassination of Henry IV. by Ravallac, the outcry against them was renewed. Although it seems quite certain that this clamor was utterly without foundation, yet the opinions held by one of their order, Mariana (q.v.), on the right of revolt, though condemned by the general, gave a color to this and every similar imputation. A less deep but more permanent and formidable movement against them was gradually stirred up at a later period, by a combination of all the causes of unpopularity already described, to which new point was given by the well-known Jansenist controversy, and by the questions as to the imputed laxity of the moral teaching of the J., and their alleged corrupt and demoralizing casuistry. What the ponderous and indignant prelections of the Sorbonne, and the learned folios of the Dominican and Augustinian schools had failed to accomplish, the wit and brilliancy of the celebrated *Lettres Provinciales* of Pascal (q.v.) effectually achieved. The laxity of some of the Jesuit casuists was mercilessly exposed by this brilliant adversary, who represented it as the authorized teaching of the order, and the crafty maxims and practices popularly ascribed to the society were placed before the world in a light at once exquisitely amusing and fatal to the reputation of the body. The attempts at rejoinder on the part of the J. served only to fix the ridicule more firmly. Of the thousands who laughed at the happy humor, or

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sympathized with the vigorous raillery, of Pascal, few, indeed, could plod through the learned but heavy scholasticism of his adversaries. In vain the J. insisted that the obnoxious casuists had been condemned by the society itself; in vain they showed where their opinions differed from those imputed to them. The wit of Pascal remained unanswered; and whatever were the logical merits of the controversy, no doubt could be entertained as to its popular issue. The pungent pleasantries, too, of the *Provincial Letters* were but a foretaste of the acrimony of the later Jansenistical controversies, in which the J. stored up for themselves an accumulation of animosities in the most varied quarters—the divines, the lawyers, the courtiers—which were destined to bear bitter fruit in the later history of the society in France. Nevertheless, after a long conflict, they enjoyed a temporary triumph in the last years of the Regency and the beginning of the reign of Louis XV.

In Germany, the Jesuit institute was received with general and immediate favor. In the Rom. Cath. territories, Austria, Bavaria, and the Rhenish principalities, they not only founded colleges and other establishments of their own, but they were appointed at Ingolstadt and other universities to hold important professorships, and received in many dioceses the charge of the episcopal seminaries then newly established. Before the death of the first general, St. Ignatius, the order could reckon in Germany 26 colleges and 10 professed houses; and Lainez, second general, was able to say that there was scarce a German town of note which had not a Jesuit college. In the mixed states, their career was not so unclouded. Their great learning and ability, and their thorough devotion to the church, made them at once eager and formidable polemics. In Hungary and Transylvania, much bitterness arose out of their introduction; the same may be said of Bohemia and Moravia; and through the whole course of the Thirty Years' War, the J., though in many instances wrongfully, were regarded by the belligerent Protestants as the soul and centre of the Rom. Cath. camp.

In the Netherlands, they encountered some opposition at first; but 1562, Lainez, second general of the order, came to the Low Countries, and a college was opened at Louvain, which eventually became one of the greatest colleges of the order. In the Netherlands, the Jansenistical party was less numerous and less influential than in France, and the conflict with them was less permanently prejudicial to the Jesuits. In the Prot. kingdoms, the J. obtained entrance only as missionaries, and in some, as in England, Scotland, and Ireland, with great difficulty and peril. From England they were excluded by the penal laws under pain of death; nevertheless, with a constancy and devotedness which it is impossible not to admire, they maintained through the worst times an unbroken succession of missionaries in many parts of England. They often resorted to the most singular disguises, and generally bore false names; and several of the old Rom. Cath. man-

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sions still show the 'Priest-hole,' contrived as a retreat for them in sudden emergency. Into Ireland they effected entrance almost at their foundation, and after many vicissitudes, toward the close of the reign of Charles II., they had more than one considerable college for the education of youth.

But a still more fertile field for the enterprise of the order was that of the missions to the heathen, in which they outstripped all the older orders in the church. In the Portuguese colonies of India, the successes of Francis Xavier (q.v.) are well known. The results of their missions in China and Japan (see RICCI: SCHALL) were even more extraordinary, as also in N. and Central America. Above all, their establishments in the southern continent, in Brazil, in Paraguay and Uruguay, on the Pacific coast, in California, and the Philippine Islands, were missions of civilization as much as of religion; and Sir John Bowring recognizes in the present condition of the native population of the Philippines, the results of the judicious labors of the early Jesuits.

Such was this association in the first stage of its history. At their first centenary jubilee, the members already numbered 13,112, distributed over 32 provinces. At their suppression, a century later, they had increased to 22,489, and were possessed of 24 professed houses, 669 colleges, 176 seminaries, 61 novitiates, 335 residences and 275 missionary stations in infidel countries, or in the Prot. states of Europe.

The decline in the fortunes of the J. was rapid and decisive in its consummation. The first blow which they sustained was in Portugal. An exchange of colonial territory having been effected between that kingdom and the crown of Spain, the so-called 'Reductions' of Paraguay (q.v.), in which the Jesuit missionaries possessed an authority all but sovereign, were transferred to Portugal. The native Indians having resisted this transfer, the Portuguese ascribed their disaffection to the J. missionaries. The Portuguese minister, Pombal de Carvalho, to whom the J. allege that their possessions in Portugal had long been an object of desire, instituted a commission of inquiry; and while it was pending, an attempt on the life of the king, Joseph, which was laid to the charge of the J., furnished him with a fresh ground of impeachment; and without waiting any juridical proof of either accusation, he issued 1759, Sep., a royal decree, by which the order was expelled from the kingdom. The example was followed in other kingdoms. In France, under the Duke de Choiseul, the immediate occasion of the disgrace of the J. was a trial in the civil courts. Father Lavalette, as procurator of the order in Martinique, had consigned to a commercial house in Marseilles two valuable cargoes, which were seized by English cruisers, and Lavalette being unable to meet the bills, the Marseilles merchants proceeded successfully against the order. The J. replied that Lavalette acted not only without the authority of the order, but against its positive constitutions, and appealed to the

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parliament of Paris against the sentence. The inquiry thus raised presented an opportunity of which the ancient enemies of the order in the parliament eagerly availed themselves. A report on the constitutions of the society, highly damnatory, was speedily drawn up, and a demand was made for the suppression of the order, as being irreconcilable, in its constitution and practice, with the interests of the state and of society. A strong effort was made to arrest the proceeding; but a powerful court-faction, aided by the secret influence of the royal mistress, Madame de Pompadour, who was irritated by the refusal of her Jesuit confessor to grant her absolution unless on condition of her separating from the king, and supported in the press by the philosophic party, carried all voices, public and private, against the Jesuits. An attempt at compromise was proposed to the general, Father Ricci, by which the obnoxious constitutions might be abolished or modified; but his unbending reply, 'Sint ut sunt, aut non sint' ('Let them be as they are, or let them cease to exist'), cut short all negotiation; and a royal edict was published 1764, by which the society was suppressed in the French territory. This example was followed by Spain, 1767, with great harshness and severity; and by the minor Bourbon courts of Naples, Parma, and Modena. The court of Rome had zealously but vainly interposed in their behalf, and from Clement XIII. especially, they received earnest support. But his successor, Clement XIV. (q.v.), inclining in this and all other questions of church and state to the side of peace, having in vain endeavored to procure from the courts by which they were condemned a relaxation of their severity, and being pressed by the ambassadors of France and Spain, at length issued, 1773, July 21, the celebrated bull, 'Dominus ac Redemptor Noster,' by which, without adopting the charges made against the society, or entering in any way into the question of their justice, acting solely on the motive of 'the peace of the church,' he suppressed the society in all the states of Christendom. The bull was put into execution without delay. In Spain and Portugal alone, the members of the society were driven into exile. In other Rom. Cath. countries, they were permitted to remain as individuals engaged in the ministry or in literary occupations; and in two kingdoms, Prussia under Frederick the Great, and Russia under Catherine, they were even permitted to retain a quasi-corporate existence as a society for education.

What was meant, however, to be the suppression of the society, proved but a temporary suspension. The ex-members continued in large numbers, especially in the Papal States and n. Italy; and soon after the first storm of the Revolution had blown over, measures began to be taken for the restoration of the society. The first overt reorganization of them was 1799, by the Duke of Parma, at an inconsiderable town called Colorno, at which one of the earliest novices was the afterward celebrated Angelo Mai. This proceeding of the Duke of Parma was barely tolerated by the pope: but 1801, Pius VII. per-

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mitted the re-establishment of the society in Lithuania and White Russia, and with still more formality in Sicily 1804. It was not, however, until after the restoration, and the return of Pius VII. from captivity, that the complete rehabilitation of the Jesuit order was effected, by the publication of the bull *Sollicitudo Omnium Ecclesiarum*, 1814, Aug. 7. In the same year, they opened a novitiate at Rome; and 1824, their ancient college, the Collegio Romano, was restored to them. In Modena, Sardinia, and Naples, they were re-established 1815, also in Spain. They were again suppressed 1820-25, 1835-44, 1854-58, and banished once more 1868. In Portugal, they have never obtained firm footing. Dom Miguel, 1832, issued a decree for their restoration; but the order was reversed by Dom Pedro 1833. Their position in France has been one of sufferance rather than of positive authorization; nevertheless, till of late they were very numerous and influential, and their educational institutions held the very highest rank. In 1880, however, the republic decreed the dissolution of the order, without giving it the alternative of seeking authorization; and in July of that year the members were expelled from all their establishments save the educational, an additional month being allowed them for vacating the latter. In Belgium, they reinstated themselves after the revolution, and they now possess many great establishments, professed houses as well as colleges, largely attended both by Belgians and by foreigners. In Holland, also, they have several considerable houses, as well as in England, Ireland, the United States, and, within a recent period, Scotland. In Switzerland, they opened 1818 a college at Fribourg, which became a flourishing establishment, and subsequently they extended themselves to Schwytz and Lucerne; but the war of the Sonderbund (one of the main causes of which arose from the Jesuit question) ended in their expulsion from the Swiss territory. Of the German states, Bavaria and Austria tolerated their re-establishment for educational purposes. In the Italian province of the former, as also in the Tyrol, they had had a certain freedom until the revolution of 1848. In Russia, they were placed under sharp restrictions 1817; and a few years later, 1820, in consequence of their successful efforts at proselytism, they were banished by a final ukase from the Russian territory, whence they still remain excluded. The Italian revolution of 1848 seriously affected their position in that country. In that year, Pius IX. found it expedient to permit the breaking up of the college and other houses in Rome. They returned, however, with the pope himself, and resumed possession of their ancient establishments. On the proclamation of the kingdom of Italy, they withdrew from Sardinia, Naples, Sicily, and the annexed territory in general. In the recent legislation of the kingdom of Italy, the J. have been visited with a special measure of repression. While each of the other principal religious orders is permitted to retain its 'mother house' at Rome, in which the general of the order may reside, the J. have been required to quit their principal convent of

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the Gesu. In Germany also they have been treated with exceptional severity, being held responsible as the main agents and advisers of the measures adopted in the Vatican Council, which are complained of by the government as infringing the rights of the state. By the law of 1873, July 4, the order is excluded from the empire; its establishments are abolished; and all foreign Jesuits are ordered to be expelled, and the German members of the society, as well as of kindred orders and congregations, to be 'interned.'

JESUITS IN THE UNITED STATES.—J. mission work in the United States began soon after 1625, when J. missionaries from France arrived at the newly-settled colony of Quebec, and after providing for the spiritual wants of the colonies dispersed and began preaching to the Huron Indians. In the wars between the Hurons and the Iroquois, several J. fathers were cruelly tortured and put to death by the latter tribe. From the Indian settlements in Canada, some of the missionaries crossed the Kennebec river and began preaching to the Indians in New England, notably the Abenakis tribe, who in a body asked and received baptism. While these French J. were laboring in the e., another party, who accompanied Leonard Calvert on his expedition to the Chesapeake 1633, assisted in founding the Rom. Cath. colony in Md., and became the first religious instructors of the early settlers of Md. and the Indians in contiguous parts. In 1673 Jacques Marquette (q.v.) French J. missionary and priest, left Quebec with Louis Joliet (q.v.) and a small party, under orders from Frontenac, gov. of Canada, to undertake an expedition of discovery. They had heard of the Miss. river from some Illinois Indians, and from Green Bay made their way through Lake Michigan, then through the Wis. river to the Miss. river and down that stream to the mouth of the Ark. river. This discovery of the great w. waterway soon afterward induced adventurers and J. missionaries to follow in Marquette's course for conquest and religious labors. In 1680 and 82 Robert La Salle (q.v.) made two voyages of discovery and established a number of colonies along the rivers of the present states of Ill. and Ind., and these were visited a few years later by J. missionaries, also from Canada. The J. in the United States, numbering (1896) about 1877, are divided among the provinces of Md. and Mo., the missions of Mass., Penn., Md., Va., D. C., N. Y., La., O., Cal., Colo., and Alaska, and the special establishments in New York, St. Louis, Cincinnati, Chicago, Milwaukee, New Orleans, Mobile, and other leading cities. The following educational institutions are maintained by them: Boston College, S. Boston; College of the Holy Cross, Worcester; College of St. Francis Xavier, New York; St. John's College, New York; St. Joseph's, Philadelphia; St. John's, Frederick, Md.; Loyola, Baltimore; Gonzaga, Washington; Georgetown, D. C.; Spring Hill, Mobile; St. Louis Univ., Mo.; College of the Immaculate Conception, New Orleans; St. Charles's. Grand Coteau, La.; St.

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Joseph's, Bardstown, Ky.; St. Xavier's, Cincinnati; St. Ignatius's, San Francisco; and Santa Clara, Col.

The literature of the history of the J., whether hostile or friendly, is almost endless in extent and variety: two of the most recent works on either side are Gioberti's *Il Gesuita Moderno*, 1847, and Cretineau Joly's *Histoire de la Compagnie de Jesus*, 1845. See also the histories by Wolf, Steinmetz, Huber, Guettée; Foley's *Records of the English Province of the Society of Jesus*.

JESUS, n. *jě'zŭs*, often JESU, n. *jě'zô* (CHRIST), [L. *Jesus*—from Gr. *Iêsous*—from Heb. *yěshû'â*, Jehovah is salvation]: the Lord and Savior of mankind; the Son of God; called also 'the Christ,' that is, 'the Anointed'; the name (JESUS) given to the son of the Virgin Mary by the angels who announced his approaching birth (Matt. i. 21; Luke i. 31), at the same time declaring the reason for the name: 'for he shall save his people from their sins.' IHS. is an abbreviation of the Greek name in capitals, $\text{I}\text{H}\Sigma\text{O}\text{V}\Sigma$, the abbreviation appearing anciently $\text{I}\text{H}\bar{\text{C}}$, C being a form of the Greek capital letter sigma, Σ ; and $\bar{\text{I}}$ the capital letter with the mark (—), denoting the Gr. η , or long *e*.

The date of the birth of J. is now generally fixed a few years—at least four years—before the commencement of the Christian era in the accepted chronology. The reasons of this opinion we cannot here state, but it may be observed that the reckoning of dates from the birth of Christ did not begin till A.D. 525, when the present era was fixed by Dionysius Exiguus, an abbot at Rome—a period when error on such a point was very probable. The precise date of the birth of J., however, cannot be determined, nor can the year of his death be much more confidently stated. The most probable computation fixes his death in A.D. 30, or, at the age of 33; and there is ground for the assertion that he must have been born before B.C. 4, Feb.; and that his death could not have been later than A.D. 35. As to the month or day of the birth of J., nothing is known, though the circumstance that shepherds were watching their flocks by night makes it doubtful whether it could have occurred at the time at which the festival of Christmas (q.v.) is held.—The place of the nativity was Bethlehem of Judæa (see BETHLEHEM).

The Evangelists give the simple, artless, and majestic narrative of the birth of J., his ministry, death, resurrection, and ascension into heaven. For a connected account combined from the four Evangelists, see the various *Harmonies of the Gospels* (notably Robinson's); see also for comment and elaboration various *Lives of Christ*.

The opponents of Christianity have not, in general, disputed the historic truth of the gospel narrative of the life of J.; the miracles of course excepted. Celsus and other heathen writers admitted even the truth of the miracles, but alleged them to have been wrought by magic, or to have been too few and inconsiderable to attest the claims of Jesus. Their modern successors have, of course, rejected these views. Some of them have endeavored to show that

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J. was ambitious of earthly power, but this has not been a prevalent theory among these writers. More generally, they have regarded him as merely adapting his conduct and teaching to the notions common among the Jews, and in particular to their expectation of the Messiah; while they admit the unequalled excellency of the religious and moral system taught by him. The inconsistency of their scheme is held to be obvious by orthodox theologians, who allege that it represents the noblest and purest system of morality as based on a selfish and outrageous imposture. The character of J., as displayed both in his life and in his teaching, is the great argument among the many arguments relied on by the advocates of Christianity.

The correspondence of J. with Abarus, King of Edessa, though we have it in Eusebius, can only be ranked with monkish legends. Of no greater value are descriptions of the personal appearance of J., and pictures of him: see CHRIST, PICTURES OF.—In general, see CHRIST, THE: CHRISTOLOGY: TRINITY: SON OF GOD, THE.

JESUS, COLLEGE OF, Oxford, England: one of the institutions in Oxford University. In 1571 Queen Elizabeth, on petition of Dr. Hugh Ap-ricc, or Price, granted a charter for the foundation of this college, in which there were to be a principal, eight fellows, and eight scholars. In 1622, James I. granted the college a new charter, including a code of statutes. These original foundations were set on a new footing 1685 by the will of Sir Leoline Jenkyns, who added considerable endowments to the college, but arranged that the greater part of the fellowships, scholarships, and exhibitions should be confined to Wales. The endowments were subsequently increased to 19 fellowships and 18 scholarships. The commissions under 17 and 18 Vict. c. 81, converted five of the fellowships into scholarships, and entirely suppressed one fellowship. Of the remaining fellowships, one moiety was confined to the principality of Wales, and the other thrown open. Four may be lay fellows; the others must take holy orders within one year after they shall be of sufficient standing to be masters of arts. The scholarships are confined to Wales, with the exception of King Charles I.'s scholarships (confined to Jersey and Guernsey), and two others, which are open. There are nearly 30 exhibitions or annual prizes in this college, of about £40 per annum. This college presents to about 20 livings, and has ordinarily about 200 names on the books. This was the first Prot. college, and in its statutes the Prot. religion was asserted and guarded by many enactments.

JE'SUS, SOCIETY OF: see JESUITS.

JESUS, SOCIETY OF THE SACRED HEART OF: virtually the Jesuits under another name, established to continue their work after their suppression.—The name was taken also by a society of women, having similar aims, established Paris 1800, approved by Leo XII. 1826. It is zealous in the education of young women and has found much favor. There are more than 100 establishments in Europe, and there are some in the United States.

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JE'SUS, THE SON OF SI'RACH: see ECCLESIASTICUS.

JE'SUS COL'LEGE, Cambridge, England: one of the institutions in Cambridge University. It was founded 1496 by John Alcock, Bp. of Ely, to whom the king granted for the purpose the nunnery of St. Radegund, suppressed for the dissolute conduct of its inmates. The appointment of the master rests with the Bp. of Ely. There are 16 foundations, and three bye-fellowships, and numerous scholarships. Among distinguished members of this college are Richard Fox, Bp. of Winchester in the reign of Henry VII.; Abp. Cranmer; and Fisher, Bp. of Rochester in the reign of Henry VIII.

JET, n. *jět* [OF. *jetter*, or *jecter*, to cast, throw, or fling—from L. *jactārē*, to cast or throw: F. *jet*; OF. *geet*; It. *getto*, a cast, a throw]: *literally*, a cast or throw; a small stream of water or other fluid forcibly emitted; a shoot of water; a gas branch: V. in *OE.*, to fling about the body; to strut about proudly; to shoot out; to jut out; to intrude. JETTING, a. *jět'ting*, shooting forward or out; in *OE.*, stalking about proudly; jolting; strutting. JET-D'EAU, n. *zhā-dō'* [F. a throw of water]: an ornamental water-spout or fountain. JETS-D'EAU, n. plu. *zhāz-dō'*. JET-ANT, n. *Formica fuliginosa*, species of ant which makes out of masticated wood-dust a nest of card-board, which it manufactures in the stumps of trees.

JET, n. *jět* [OF. *jet* or *jayet*—from L. and Gr. *gāgātēs*, jet—said to be so called from the river *Gagas*, in Lycia]: bituminous mineral of intense velvety-black or brownish-black color. JETTY, a. *jět'tī*, made of jet; black as jet. JET'TINESS, n. *-nēs*, quality of being jetty; blackness. JET-BLACK, of the color of jet; of the deepest black.—Jet is not harder than ordinary coal, but is capable of being easily cut and carved, and of receiving a beautiful polish. It is now found in many parts of the world. In Great Britain, it is obtained chiefly at Whitby, Yorkshire, where it is found mixed with fragments of bituminized wood of coniferous trees in the Upper Lias or Alum Shale of that district. Jet is only a peculiar form of pitch-coal, containing about 37½ per cent. of volatile matter, like the Albertite of New Brunswick and some of the cannel coals. It is electrical when rubbed, hence it has been called black amber by the Prussian amber-diggers, when it occurs in sand and gravel beds. Very large quantities are obtained in France in the dept. of Aude, where it gives employment to numerous artisans, who form it into rosary beads, crosses, and other trinkets, extensively sold in Rom. Cath. countries. Spain also supplies fine jet, which, like that of the French workings, is found in irregular veins in the lower marls of the cretaceous series, corresponding with the Sussex gault. The Spanish jet is found at Villaviciosa, in the province of the Asturias, and is manufactured principally at Oviedo. As a material for mourning ornaments, jet is admirably adapted, and for that purpose is used largely in many countries.

JETSAM—JETTY.

JETSAM, n. *jět'săm*, or **JET'SOM**, **JET'SON**, **JETTISON**, *jět'tì-sùn*, **JOT'SON** [OF. *jetter*, to throw; Icel. postfix, *samr*, together]: the throwing of goods overboard to lighten a ship; the goods thrown over; goods found thrown ashore without an owner: V. to throw goods overboard a ship in time of danger in such a way that there may be good hopes of their recovery. *Note*.—*Jetsam* is goods thrown into the sea when the ship is in danger; *flotsam*, when goods are floating on the sea after shipwreck (see **FLOTSAM**); *lagan*, when goods are sunk, but fastened to a buoy or float in order to be found again; *jetsam* is applied to goods disposed of in any way at sea with the view of subsequent recovery; *lagan* is applied to goods sunk with a float attached: see **LAGAN** and **LIGAN**.—See **JETTISON**.

JETTISON, in Law [see **JETSAM**]: the throwing overboard of a ship's cargo, either in whole or in part, in cases of necessity, so as to lighten the vessel in a storm, or to prevent capture, or for other justifiable cause. It is obvious that great discretion is required, so as to judge when the proper time arrives for this desperate expedient; and in case of part only of the cargo being sacrificed, to select which part. Each case must depend on its own circumstances; and the master of the vessel is the authorized agent to bind all parties in such a situation. It often happens that the goods belong to different owners; therefore, to compensate the owner of the particular goods thrown overboard, the doctrine of general average is resorted to: see **AVERAGE**. In case of a storm, the several persons interested in the ship, freight, and cargo in general contribute ratably to the loss; but there are exceptions when the goods were carried on deck instead of in the hold. When the goods sacrificed by jettison have been insured, the insurer has the benefit of this contribution or average *pro tanto*.

JETTY, n.: black as jet: see under **JET 2**.

JETTY, n. *jět'tì* [F. *jetée*, a bank, a pier—from *jeter*, to throw or cast—from L. *jacturē*, to cast or throw (see **JET 1**)]: an erection that juts or projects beyond the rest; any erection jutting into a river or into the sea; a landing-place or pier; sometimes spelled **JETTEE**, or **JUTTY**. **JETTY-HEAD**, that part of a wharf which projects beyond the rest.

JETTY, *jět'tì*: wall, pier, rampart, or dike, built out from the land into water to improve a harbor or river; distinct in object from a dike which is constructed to prevent lowlands being inundated by the sea or a river. The principal jetties in the world are those at the mouths of the Miss. river built by Capt. James B. Eads (q.v.); at the mouths of the Danube, Oder, Pregel, Maas, Memel, Vistula, Liffey, Blyth, Esk, Wear, and Dee rivers; and in the harbors of Calais, Boulogne, and Ostend. Numerous minor ones in important rivers and at river mouths in large lakes in the United States have been constructed by the federal govt. to deepen or widen channels, protect harbors from dangerous winds or currents, or otherwise improve navigation. On the great lakes alone there are about 70 harbors

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wholly or in part artificial, and examinations have been made at many other points with the view of future improvements. The mouths of the various rivers in Europe that have been artificially improved show a general adaptation of the 'parallel' system of piers or jetties, and the same is true of the artificial harbor at Port Said on the Suez canal, of the sea-entrance of the North Sea canal of Holland, of the Sulina mouth of the Danube, and of the s. pass of the Miss. river. The most notable instances of the artificial improvement of river mouths are in the works of Sir Charles A. Hartley on the Danube, where the depth was increased from 9 to $20\frac{1}{2}$ ft., and of Capt. Eads on the s. pass of the Miss., which he deepened from 8 to 30 ft. In the former case the jetties or piers were designed to be constructed of rip-rap capped with large blocks of concrete; one J. 5,850 ft. long, the other 4,310 ft.; starting at shore points 2,500 ft. apart, and converging in the water to about 600 ft. apart. The Sulina branch of the river was an open seaboard stream, full of submerged sand banks and wrecks of vessels, with a maximum channel depth of 11 ft., and average of 9 ft., when the work of improvement was begun, 1856. The provisional piers were completed 1861, when instead of the worst harbor Sulina became one of the best for war and commercial purposes on the Black Sea, with a depth of 17 ft. at the bar. The s. pier was afterward lengthened, and the depth of $20\frac{1}{2}$ ft., attained 1872, has been maintained.

The demands of commercial interests for the permanent improvement of the mouths of the Miss. river first received recognition by the federal govt. 1838, when an appropriation was made to begin the work. The earliest system employed was that of dredging, by which a narrow and shallow channel was formed by the action on the deposit of the propeller screws of powerful dredge boats. This system was both slow and uncertain, for in many instances the slight excavations of one day would be filled up with the accumulation of river deposit or by the pushing outward of the bottom deposit by the tide on the next day. The new channel formed by dredging, even in the most favored localities, rarely extended more than 4 ft. below the normal one, and from being constantly imperilled by storms and tides made navigation by large vessels greatly dependent on towage. At one time a congressional investigating committee found 3 vessels aground on the bar, 17 outside awaiting high water to enter, and 35 inside detained by shallow water. In the 5 years 1872-7 official reports showed that 417 vessels had been aground on or near the s.w. pass bar to the sea. The success of Sir Charles A. Hartley's Danubian improvements led Capt. Eads to urge the application of the parallel J. system to the s.w. pass, before a congressional convention in St. Louis, 1873, May. In the following year a board of U. S. A. engineers appointed to study the whole subject, reported in favor of the construction of a canal through the strip of land separating the river at Fort St. Philip from Breton Bay in the Gulf of Mexico, 40 m. above the mouth, and estimated the cost at

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\$13,000,000. Before this report was submitted, Capt. Eads proposed to the govt. to deepen the s.w. pass bar to 28 ft. by the J. system at the expense of himself and his associates, no payments to be made till he had secured a depth of 20 ft. His proposition brought the J. and canal systems before congress, where they were discussed with great bitterness, and bills for beginning work under each were introduced, modified, passed in one house and defeated in the other, and at length wholly rejected. In 1875 the house of representatives again took up Capt Eads's proposition for the s.w. pass and adopted it; the senate modified it by substituting the s. for the s.w. pass (the s. being the smallest of the 3 passes), and the house concurring, he was authorized to improve the s. pass by the J. system at a cost of \$5,250,000, of which \$500,000 were to be paid on attaining a depth of 20 ft., \$500,000 more for 22 ft., and the remainder in similar instalments till the last payment was secured by securing a depth of 30 ft. As this bill involved an entire alteration of his plans and estimates, and forced him to complete over 80 per cent. of the whole work to secure 22 ft. of water and less than one-fifth the total payment, congress almost unanimously voted him \$1,750,000 in advance of its terms. The work was begun 1875, June; the 30 ft. were secured 1879, July; and by the natural action of the tide the depth of the channel was increased to 34 ft., 1884, July 1. (For method of construction, see DIKE.)

JEU DE MOTS, phrase, *jé-dé-mô* [F.]: play on words; pun.

JEU D'ESPRIT, phrase, *jé-dé-sprê* [F.]: witticism.

JEVONS, *jév'onz*, WILLIAM STANLEY, LL.D.: author: 1835–1882, Aug. 13; b. Liverpool; grandson of William Roscoe, historian. He graduated at Univ. College, London; held an office in the royal mint at Sidney, Australia, 1854–59; became a fellow of Univ. College 1864, prof. of logic and mental and moral philosophy, and Cobden lecturer on political economy in Owens College, Manchester, England, 1866, and prof. of political economy in Univ. College 1876; and gave up academic work for literature 1881. His publications include *Data concerning the Climate of Australia and New Zealand*; *The Value of Gold* (1863); *The Coal Question* (1865); *Money and the Mechanism of Exchange*; *Elementary Lessons in Logic* (1870); *Theory of Political Economy* (1871); and *The Principles of Science* (1874–77). He received the degree LL.D. from Edinburgh Univ. 1876.

JEW, n. *jó* [OF. *Juis* and *Juifs*, Jews—from mid. L. *Iudeus*, Gr. *Ioudaios*, an inhabitant of *Judæa*—from Heb. *Yehúddáh*, Judah, son of Jacob]: an Israelite; a Hebrew (see JEWS): in accordance with a barbarous prejudice inherited from times of ignorance and persecution—in any dishonest dealings, applied to a cheat. JEW'ESS, n. -*ès*, a female Jew. JEW'ISH, adj. -*ish*, like a Jew, or pertaining to one. JEW'ISHLY, adv. -*ly*. JEW'ISHNESS, n. JEW'RY, n.

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-rî, Judea; a district inhabited by Jews. **JEW'S-STONE**, the fossil spine of a large egg-shaped echinus.

JEW, THE WANDERING: subject of an ancient and widely current legend. The legend of the Jew, who cannot die, but, as the punishment of his sin against the Lord Jesus, is obliged to wander over the face of the earth till Christ shall pronounce his doom at the last day, seems to have originated as a vague suggestion of one who should be undying, from the words of Christ concerning the apostle John (Jn. xxi. 22), 'If I will that he tarry till I come, what is that to thee? follow thou me. This saying therefore went forth among the brethren, that that disciple should not die.' It arose, probably, in the 13th c., when first it is related by Matthew Paris, and may be supposed to indicate the Jewish people, scattered throughout the world, and nowhere finding a home. According to the current legend, the Wandering Jew is Ahasuerus, the shoemaker at Jerusalem, who, when the Savior wished to rest before his house, on his toilsome way to Golgotha, drove him away. Another legend states him to be Pilate's door-keeper, Kartaphilus, who struck Jesus on the back, as he led him out of his master's judgment-hall. So recently as the last century, impostors took advantage of the belief in this legend, and gave themselves out for the Wandering Jew; and people were not wanting who, from time to time, maintained that he had appeared to them under different forms. A popular book relating in detail the history of the Wandering Jew has been repeatedly printed in German, French, Dutch, and Latin. The legend has likewise been frequently worked up in a poetical form, as by A. W. von Schlegel in *Die Warnung*; by Schubert in *Ahasuer*; by Goethe in *Aus meinem Leben*; by Mrs. Norton in *The Undying One* (1842); and by Eugène Sue in his *Le Juif errant*. Compare Grässe, *Die Sage vom Ewigen Juden*; Gaston Paris, *Le Juif errant* (1880); Moncure Conway, *The Wandering Jew* (1881.)

JEWEL, n. *jô'ël* [OF. *jouel* and *joyel*; F. *joyau*, a little joy, a jewel—from F. and OF. *ioie*, joy, pleasure—from mid. L. *jocûlĕ*, a jewel—from L. *jocus*, sport, toying; It. *giojello*, all manner of jewels—from *gioja*, delight, a jewel; Sp. *joyel*, a jewel]: an ornament, generally of precious metal or valuable substance; a gem; a precious stone; a name of fondness: V. to adorn with precious stones; to place the balance of a watch upon a diamond. **JEW'ELLING**, imp. **JEW'ELLED**, pp. *-ëld*: **ADJ.** adorned with jewels; running on diamonds, as certain parts of a watch. **JEW'ELLER**, n. *-lër* [OF. *joyallier*]: one who makes or deals in jewels, as in silver and gold and ornaments. **JEWELLERY**, n. *jô'ël-ër-î*, or **JEW'ELRY**, n. *-ël-rî*, jewels and ladies' trinkets in general (see below). **JEWEL-CASE**, a case for keeping gems and ornaments in. **JEWELLERS'-GOLD**, gold with an alloy of copper and silver in varying proportions, but not of the standard fineness. **JEWELLERS'-ROUGE**, a kind of red putty powder, used for polishing jewellery.

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JEWEL, *jô'èl*. (or **JEWELL**), **JOHN**, D D.: 1522, May 24—1571, Sep. 22; born Buden, Devonshire. England: bishop of Salisbury. He was educated at Oxford Univ., appointed tutor there and disseminated the principles of the Reformation, publicly professed Protestantism after the accession of Edward VI., was expelled from the Univ. by the Romanists in the reign of Mary, and on the invitation of Peter Martyr spent some time teaching in Strasburg. On the accession of Elizabeth he returned to England, was appointed one of 8 divines to hold a controversy with 8 Romanist divines in Westminster, and a member of the commission to suppress Rom. Catholicism in w. England; and was consecrated bishop of Salisbury 1560, Jan. 21. By order of Elizabeth a copy of his most famous work, *Apologia Ecclesiæ Anglicanæ* (1562) was chained in every English church, for public perusal.

JEW'ELL, MARSHALL: 1825, Oct. 20—1883, Feb. 10; b. Winchester, N. H.: manufacturer. He learned the tanner's trade with his father; removed to Rochester, N. Y., and learned telegraphy, 1847; was engaged three years in telegraph construction in O., Tenn., Miss., and the s.w. states; and became a partner of his father and brothers in the leather-beltng business in Hartford, 1850, remaining so till death. He was a warm supporter of the Union during the civil war. was elected gov. of Conn. 1869, 71 and 72, appointed U. S. minister to Russia 1873, recalled and appointed by Pres. Grant U. S. postmaster-gen. 1874, defeated by two votes for the U. S. senate 1879, and was chairman of the national republican committee during the presidential campaign 1880. The new state-house in Hartford was erected during his administration as gov.; he negotiated a convention for protecting trademarks and, while minister to Russia, secured information that led to the introduction of the Russian process of tanning into the United States. He supported Sec. Bristow in his prosecution of the whisky ring; and, while in Pres. Grant's cabinet, inaugurated the reforms that led to the star postal route trials.

JEW'ELLERY, or **JEWELRY**: jewels or trinkets in general. The manufacture of jewels has in all times been a test of the artistic powers of a nation; for, being intended mostly for personal adornment, the aim of the jeweller has been to produce the largest amount of beauty in the most limited space. It is probable that the wearing of ornaments of gold and silver was almost as early as the discovery of those metals. A mere hole drilled through the small pieces of gold or silver, to enable them to be strung round the waist or neck, would be the first stage; then, when the ductility of the metals became known, they would be beaten probably into bands or rings, giving rise to ring-money; these rings, when increased in size, would become torques for the waist, neck, arms, or ankles, labrets for the lips, and rings for the ears and fingers. As refinement increased, these articles would be made more and more ornamental; and the original object, of mere con-

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venience and safety in carrying the much-valued metals, would be lost in the secondary one of personal adornment; the art of the goldsmith would be called into play, and the taste of the nation would be marked by the good or bad designs in demand for this purpose. Jewels being articles of luxury and taste, their possession always indicates to a certain extent the wealth of nations, and we are as much impressed with the advanced state of the ancient Egyptians by the nice art and refined taste exhibited in the J. found in their tombs, as by the vast architectural works of which they have left so many remains; indeed, modern art, with all its wondrous advances, cannot do more than equal the exquisite workmanship of those elegant golden jewels sent by the late viceroy of Egypt and M. Mariette to the International Exhibition, which were taken from the tombs of ladies of distinction, of whose mummies they had been the decorations. There is an essential difference between the J. of ancient and modern times. Our goldsmiths depend much on the processes of casting, drawing, stamping, and other metallurgical operations, and produce thereby great accuracy of outline and high finish. The ancients wrought by hammering, chasing, and *repoussé*, depending entirely on the taste and skill of the artist, instead of the perfection of his tools and mechanical arrangement; consequently, their works bear the stamp of artistic production, while modern works, however beautiful, have usually the character of mere manufactures executed with mechanical precision rather than artistic taste; and what they gain in nicety of finish is more than counterbalanced by what is lost in richness of effect. See GILT JEWELRY: also DIAMOND.

JEW'ELS, in Heraldry: absurdly and needlessly introduced to designate the tinctures of the arms of peers e.g., argent is pearl or crystal; or, topaz; gules, ruby; azure, sapphire; sable, diamond; vert, emerald; and purpure, amethyst.

JEWETT, *jô'èt*, CHARLES COFFIN: 1816, Aug. 12.—1868, Jan 9; b Lebanon, Me.: librarian. He graduated at Brown Univ., 1835, studied theol. at Andover Theol. Seminary, and became librarian there; studied oriental languages and antiquities with a view of becoming a missionary, was appointed librarian of Brown Univ, 1841 and prof. of modern languages there 1843, studied the library systems of Europe and made large purchases of classical works, was appointed librarian and asst. sec. of the Smithsonian Institution 1848, and resigned to accept the office of supt. of the Boston Public Library 1858, with which he remained till death. His publications include *Facts and Considerations relative to Duties on Books* (1846); the textbook on library economy *On the Construction of Catalogues of Libraries and their Publication by Means of Separate Stereotyped Titles, with Rules and Examples* (1852); and *Notices of Public Libraries in the United States* (1854).

JEW'ETT, SARAH ORNE: author: b. S. Berwick, Me., Sep. 3, 1849; daughter of Theodore Herman J., M D. She

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received an academical education, has traveled extensively in various parts of the world, and beside contributions to newspapers and magazines has published *Deephaven* (1877); *Play-Days* (1878); *Old Friends and New* (1880); *Country By-Ways* (1881); *The Mate of the Daylight* (1883); *A Country Doctor* (1884); *A Marsh Island* (1885); *A White Heron* (1886); and *The Story of the Normans* in the *Story of the Nations* Series (New York 1887).

JEW-FISH: large fish of various species, weighing sometimes 700 lbs. A species, *promicrops gnasa*, is found on the coast of Florida; *stereolepis gigas*, on the coast of California; etc.

JEWISH LIT'URGY : see **LITURGY.**

JEWISH SECTS : term generally applied (after Josephus) to certain divergent schools which grew up in the midst of Judaism, subsequently to the Syrian wars. So far, however, from forming, as the word would seem to imply, separate communities with places of worship and a religious law of their own, antagonistic to that of their brethren, the disciples of the different 'sects' belonged to the same religious community, adhered to the same practical religious Law, and consequently could not well look upon each other as heretics. The chief points at issue were certain abstract doctrines, in connection with the peculiar manner in which this Law, as far as it is contained in the Scriptures, was interpreted and further developed. While the *Pharisees* (q.v.) claimed for certain time-hallowed observances and doctrines not found in the Bible a divine origin, tracing them back through tradition—orally transmitted from generation to generation—to Moses and Sinai itself, and while they, by peculiar rules of an exegesis of their own, proved these same doctrines to lie often latent, as it were, in the very letters of the Bible—the *Sadducees* (q.v.) rejected the divine origin of the 'oral law,' as well as certain spiritual dogmas not distinctly set forth in the Sacred Record. In large part the division between these two parties was political. An advanced or exalted class of Pharisees were the *Essenes* (q.v.), who formed a kind of brotherhood, far away (with only rare exceptions) from the corruption of cities, intent chiefly on the exercise of practical virtues, and ruled by a severe code of morals. For the tenets of each of these three 'sects,' see their titles.

At a later period, shortly before and after Christ, numerous divergent religious doctrines, mostly the result of a confused mixture of Judaism and Hellenism, or rather Alexandrianism (see **GNOSTICS**), were promulgated, and found adherents both within and without the pale of Judaism. Many and obscure are the names of these 'sects' recorded by the early fathers of the church, but very little is known respecting their history and dogmas. Mention is made of *Hellenians* (Hillelites?), not to be confounded with the large body of the Hellenists (q.v.) and *Meristes* (antagonistic school of Shamai?), *Galileans* (Christianizing Jews?) *Herodians* (adherents of the foreign government?), *Gaulanites*

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(Rabbinists of exaggerated tendencies?), *Masbotheans* (strict Sabbatarians?), *Hemerobaptists* (Essenes?), etc.

In the 8th c. (761 according to Munk), the Sadducean doctrine of the invalidity of the 'oral law'—a doctrine which had died out after a brief existence—was revived by Anan ben David, supposed to have held a high spiritual office (Resh-Gelutha? Gaon?) at Bagdad at the time of Caliph Abu Giafar Al-Mansor (754–775), and who, rejecting the Talmud and Midrash as the work of man, allowed only such laws and ordinances to be binding on the community as resulted immediately from a simple and natural Scriptural exegesis. He thus became founder of the most important sect of the *Karaites*, who, within an astonishingly brief period, spread over Palestine, Egypt, Greece, Barbary, Spain, Syria, Tartary, Byzantium, Fez, Morocco, and even to the ranges of the Atlas. They are now, however, found only in small numbers in Poland, Galicia, Odessa, the Crimea, Constantinople, Jerusalem, and Alexandria. Abrogating the 'rabbinical' traditions, they erected a new traditional system of their own, to be altered and freely developed by each of their successive spiritual heads. Prayer, fasting, pilgrimages to Hebron, are the points of religious practice to which they give greatest attention. Their general conduct is even by their antagonists allowed to be of the highest moral standard. They have produced an extensive special Hebrew literature, chiefly works on theology, philosophy, mathematics, astronomy, etc. The greatest number of these is now found in the Imperial Library at St. Petersburg. Some of their principal authors are Anan, Shalmon b. Jeruham, Joseph b. Noah, Jeshua, Jehudah Hadassi, Aron b. Joseph, Aron b. Eliah, Eliah Beshitzi, Kaleb, Moses Beshizi, Mardochai b. Nissan, etc.

Another peculiar sect, known as the *Shebsen*, was founded by Sabbathai Levi from Smyrna (1625–77), who proclaimed himself the Messiah, and found numerous followers throughout Germany, Poland, Italy, and Holland. Sultan Mohammed IV., however, put an end to his mission by imprisoning him, and making him adopt Mohammedanism. Many of his disciples followed his example, others turned Rom. Catholics—adhering, withal, to their former doctrines and tenets, consisting chiefly of the belief in the Messiahship of their master, a distinct leaning to the dogma of the Trinity, and the abandonment of the hope of a final return to Jerusalem under the guidance of 'Messiah ben David.' They put a thoroughly mystical interpretation on the Bible, rejected unconditionally the Talmud, and extolled their special Kabbalistic gospel, the Zohar, above all things created. This sect did not die out until the end of the last century, Jacob Frank, their last supreme pontiff (whose intimate friends and followers called themselves after his name *Frankists*), dying in a debtor's prison on the Rhine (1791).

We have finally to mention the modern *Chasidim*—not to be confounded with the ancient Chasidim (q.v.)—or *BeshTERS* (Baal Shem Tob), a side branch of the former sect, taking its stand like this on the Kabbala, but remaining

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ostensibly within the province of rabbinical Judaism. They are remarkable chiefly by their wild mode of praying, their supreme contempt for any but mystical and religious science, and their belief in the miracles wrought by their temporary chiefs or saints (*Zaddik Baal Shem*), who rule their community unconditionally, are supposed to be invested with divine powers, and have power to cure their bodily ailments. The grandeur and pomp with which these saints are surrounded, contrasts most strikingly with the simple mode of life of their flock. Constant repentance, joyfulness, disinterestedness, benevolence, peacefulness, with intrepidity, cleanliness, and temperance, are some of the chief points of the practical doctrine of this sect. One of the great reproaches, however, brought against them is, that their 'joyfulness' often leads them into transgression; that, in fact, they are inclined to sensuality. They are very numerous in Poland, Galicia, Russia, and Palestine.

The modern 'Reformers,' aiming chiefly at a simplification of the ceremonial, and abrogation of what they consider to be abuses and late additions in the divine worship, cannot well be called a sect—though, for the most part, they have synagogues and prayer-books of their own—since they belong to all other intents and purposes, to the great body of the Jewish community. As the chief promoters of this movement may be considered Zunz, Geiger, Chorin, Creizenach, Holdheim, Hess, Stern, etc. In recent years some eminent Jewish teachers have advocated a 'Reformed Judaism,' discarding the ancient Messianic hope of their race, denying the rabbinical traditions and, to a greater or less extent, the binding authority of the Hebrew Scriptures. Many of them are Deists; others are Agnostics; all claim to be 'liberal' in their opinions, and lay stress on natural ethics with little regard to the spiritual facts or forces in religion. They can scarcely be called a 'sect.'

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JEWS [corrupted from *Yehudim* (see **JEW**)]: name given, since the Babylonian captivity, to the descendants of the patriarch Abraham, who, about B.C. 2000 (according to the conjectured but improved chronology), emigrated from Mesopotamia, on the e. side of the Euphrates, to Canaan or Palestine. They were called originally **HEBREWS** (q.v.). Monotheism, or a belief in one God, the practice of circumcision, and the expectation of ultimately possessing the land in which they then sojourned, were the three distinguishing peculiarities transmitted by Abraham to Isaac, and from Isaac to Jacob and his descendants. The picture of patriarchal life in the book of Genesis is marked by an impressive naturalness and simplicity, and bears traces of a great antiquity. In consequence of a famine in Canaan, Jacob, on the invitation of his son Joseph, who had become chief minister of the king of Egypt, went down thither with all his household, which numbered 70 'souls;' and obtained from Pharaoh permission to settle in the land of Goshen. Here the Hebrews resided (Exod. xii. 40) 430 years [Bunsen (**EXODUS**) calculates 14 centuries]; according to the genealogical table of the Levites, Exod. vi. 16-25, however, their sojourn would not have lasted longer than 210 or 215 years; most of the commentators, therefore, take, with Josephus, the 430 years to indicate the period from Abraham to the Exodus (see Gal. iii. 17). The interpretation of the chronology of this period cannot be regarded as settled. During the lifetime of Joseph, and probably for some generations afterward, they were well treated, and prospered; but a new dynasty, supposed by some—with doubtful reason—to have been that of the Hykshos (q.v.) arose, and they were reduced to relentless slavery. A deliverer at length appeared in the person of Moses (q.v.), a man of grave and heroic character, who, though brought up by the daughter of Pharaoh as her son, and trained in all the learning of the Egyptians, was nevertheless filled with an intense and indignant patriotism, that acquired elevation from the ardor of his religious feelings. The circumstances that preceded and characterized the exodus (about. B.C. 1600)—such as the ten plagues and the crossing of the Red Sea—are a source of continual controversy between the Rationalistic and the Supranaturalistic schools of biblical criticism; but the *fact* of an exodus would be disputed only by the wildest skepticism. The entire history of the people is pervaded by the memory of this grand event, on which their national existence is based; it inspires their poetry, and consecrates their religion; and the Passover, with all its ceremonials and mementos, was instituted expressly to remind them of that wondrous night of sudden liberation; while the Feast of Tabernacles was to recall to the memory of latest generations the wanderings through the desert; and Pentecost, the act of the legislation on Sinai. Whether, however, in 215, or even in 430 years, the seventy 'souls' could have increased to 600,000 adult men, or, including wives and children, to between 2,000,000 and 3,000,000 souls, is a point to be determined rather by physiologists than by theologians. Again, it is to be

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noted that as definiteness in the chronology of this period is not attained by modern interpreters, so neither is it essential to the general purpose of the sacred history.

The wandering in the wilderness of the Sinaitic peninsula is said to have lasted 40 years, though a record of the events of two years only has been preserved. These, however, are obviously the most important, as they contain an elaborate account of the giving of the law (*Exod. xix. et seq.*), which is represented as a direct revelation made to Moses by Jehovah himself, who descended upon Mount Sinai in fire, amid thunders and earthquakes. The antiquity, however, of the priestly or ecclesiastical portions of the Pentateuch is keenly disputed by many modern scholars of high reputation, who endeavor to show the probability of such passages having been composed and inserted subsequent to the great organization of the priesthood by David; and in proof of this, point, among other evidences, to the Book of Judges (q.v.), which narrates the history of the Hebrews for 300 years *after* the conquest of Canaan, and which yet contains scarcely a trace of the existence of a religious institution among them. Yet it is allowed on almost all hands that the *foundations*, at least, of the Jewish theocracy, probably also a large part of the superstructure, were the direct work of Moses himself, who indeed appears to have been pre-eminently fitted for the task of a legislator:—not to enlarge on the fact that the ritualism of the Hebrews has many striking points of contact with that of the ancient Egyptians, with which he was well acquainted. This view does not settle the question of a later composition of the Pentateuch (q.v.), in its present shape and with its successive redactions and enlargements. But whatever period be allowed for the sojourn in the desert, the rough nomadic life, the frequent fighting with the fierce Bedouin tribes, through whose territories they passed—besides the lofty influences of a stern religion requiring the worship of the One Living God, the holy and almighty spirit—had transformed the runaway slaves of Egypt, by the time they approached the eastern borders of Canaan into a nation of high-spirited and irresistible warriors.

Before proceeding, it behooves us to trace a general outline of the Mosaic legislation. The laws promulgated under the 'Covenant' were not entirely new. Many were merely the solemn confirmation of ancient patriarchal tenets, such as the worship of One Supreme Being through sacrifices, prayer, vows; circumcision; the government by heads of tribes and families, etc. Other must have been adaptations of Egyptian institutions. Others, again, owed their existence to the altered circumstances of the community; and it is undeniable that some of the special ordinances contained in the Pentateuch were not carried into practice. The fundamental features of the religious as well as political constitution—closely interwoven with each other—are the following: God is Creator and Lord of the universe. The universe is His own, and to man the use of all created things has been intrusted by His will. God is therefore

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the King of the people. By the priests He is visibly represented. No man has the right to dispose of his own liberty. The soil is given to the people for only the *usufruct*: 'the land is *Mine*,' saith Jehovah: man has no further individual right of possession over it. Every seventh year it is to be left to itself as keeping a sabbath to the Lord. The absolute sale of land is prohibited; and after seven times seven years, every lease and mortgage of it is null and void, and it is to return to the heirs of those to whom it was originally assigned at the first division of the land.

The office of the Priests (q.v.) was in the hands of the tribe of Levi (q.v.), especially the descendants of Aaron (q.v.). The Levites assisted in the management of the sanctuary and the holy rites, copied and expounded the Books of the Law, kept the genealogical lists, and had the care of the general instruction of the people. Together with the priests, they had administrative and judicial functions, giving judgment always in the name of God. The High-Priest (q.v.) constituted the highest court, and his was the oracle (Urim and Thummim). Periodical Feasts (q.v.) were instituted, in order that the dependence from the Divine King should always be kept in view by the people. Every seventh day the body should rest from labor (Sabbath), as every seventh year the soil was to rest (Sabbatical year); and every fiftieth (7×7) year (Jobel) was the great year of Remission or of Jubilee. Three annual feasts, partly agricultural, partly historical, were the Pesach (see PASCH: PASSOVER), the Feast of Weeks (q.v.) and the Feast of Tabernacles (q.v.). No less was the first of the seventh month to be kept holy. The tenth of the same month was instituted a day of atonement and forgiveness of sin.

The form of government was at first theocratic. The people was divided into 12 tribes, which formed small republics, but all united under the invisible rule of Jehovah. General national assemblies decided on war and peace, and the like. Special provisions are found also for the contingency of the election of a king. After the conquest of Palestine, every city had a judge, chosen by the heads of the families and tribes. The punishments were either death, flagellation, or fines. Three Levitical cities were named by Moses as asylums or places of refuge for man-slayers whose guilt was not yet fully established. Every free citizen was bound, from his 20th year, to military service in case of war. To the besieged city—having in view the cities of the Canaanites with their frightfully polluting and corrupting idolatry—terms of capitulation were first to be offered; were these rejected, the city was to be taken, and the males were to be put to the sword. In all other cases, the virtues of charity, justice, and kindness, even toward animals, are repeatedly impressed upon the people. How far these fundamental rules were either further developed or neglected, we cannot show in this place.

The 'land of promise' became theirs at last (about B.C. 1430), under Joshua (q.v.), successor of Moses. Tribe

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after tribe of the abominated Canaanites was swept from its ancient territory, and for the most part either annihilated or forced to flee. Yet the whole bulk of the native inhabitants was not extirpated or wholly expelled, nor even subdued till a much later period: a neglect of the Divine command fraught indeed with the most disastrous consequences to the new commonwealth. The country was now divided among the tribes. The magnificent pastoral region of the Jordan had been chosen by the tribes of Reuben, Gad, and the half-tribe of Manasseh at an earlier period, because they 'had a very great multitude of cattle' (Numb. xxxii. 1); but they now for the first time entered on possession of it. The land w. of the Jordan was parcelled out to the remaining—Judah, Simeon, Dan, Benjamin, Ephraim, the second half-tribe of Manasseh, Issachar, Zebulon, Naphtali, and Asher. The tribe of Levi received, instead of a province, 48 cities scattered throughout Canaan, and the tenth part of the fruits of the field, and were allowed generally to settle individually throughout the land where they chose (see **LEVITES: PRIEST: HIGH-PRIEST**).

After the death of Joshua (about B.C. 1530), the want of a chief to the young state became sadly palpable. Little regard was paid to the Mosaic institutions; the single tribes pursued their own individual interests; intermarriages with the vile idolatrous natives weakened the bond of union still further; and the next consequence was, that the tribes were singly subdued by the surrounding nations. At this juncture there arose at intervals valiant men and women—Shofetim—Judges, who liberated the people from their oppressors, the Moabites, Philistines, Ammonites, Amalekites, etc. Of the 15 judges named, some appear to have been contemporary with each other, and to have exercised authority in different parts of the country. This period constitutes the 'heroic' age of Hebrew history. Among these judges, the prophetess Deborah (q.v.), Gideon (q.v.), Jephthah (q.v.), the herculean Samson (q.v.), and the prophet Samuel (q.v.), are especially notable; the last mentioned was, in every sense of the word, the greatest Hebrew that had appeared since the days of Moses. With him began a new and higher stage in the development of the national character, chiefly through the instrumentality of the priestly order, whose spiritual, for the most part well-directed and humanizing, influence was by him first exalted and most distinctly brought to bear upon the commonwealth. Samuel, first of the prophets, was also last of the republican chiefs of the confederate tribes. Wearied of their intestine feuds, harassed by the incursions of their predatory neighbors, chiefly, however, goaded by the characteristic desire 'to be like all the other nations' (I Sam. viii. 5), the people compelled him, when he had become 'old and gray-headed' (I Sam. xii. 2)—while the behavior of his sons, whom he had made judges, unfitted them to be his successors—to choose for them a king (B.C. 1080).

The first who exercised regal authority was Saul (q.v.),

the Benjamite. But though a distinguished warrior, and a man of royal presence, he appears not to have possessed the mind of a statesman; and his wilfulness, and the paroxysms of insanity, brought on chiefly, it seems, by the openly-expressed dissatisfaction of Samuel on account of his disobedience of God, finally alienated from him many of the bravest and best of his subjects. After his death on Mount Gilboa, David (q.v.), his son-in-law, was proclaimed king. This monarch was by far the greatest that ever sat on the throne of Israel. He ruled, as is commonly computed, B.C. 1058-18. His reign, and that of his equally famous son, Solomon (q.v.), are regarded as the golden time of Hebrew history. The remaining aborigines of Canaan and its borders—the Philistines, Edomites, Amalekites, Moabites, etc.—were thoroughly subdued; the boundaries of the Hebrew kingdom were extended as far as the Euphrates and the Red Sea; Jerusalem, till David's time held by the Canaanites, was captured by escalade, and made the capital of the conqueror; the priesthood was reorganized on a splendid scale; the arts of poetry, music, and architecture were cultivated; schools of prophecy (established, probably, by Samuel) began to flourish; a magnificent temple for the worship of Jehovah was built in the capital; and commercial intercourse was carried on with Phœnicia, Arabia, Egypt, with India and Ceylon, perhaps with even Sumatra, Java, and the Spice Islands. But there was a canker at the root of all this prosperity. The enormous and wasteful expenditure of Solomon forced him to lay heavy taxes on the people. His wealth did not enrich them; it rather made them poorer; he multiplied to himself heathen wives; and though gifted with transcendent wisdom and most brilliant mental powers, toward the end of his life he presents the sad spectacle of a common eastern despot, voluptuous, idolatrous, occasionally even cruel, and his reign (B.C. 1018-978) cannot but be regarded, both politically and financially, as a splendid failure. After his death, B.C. 978, the Hebrew monarchy, in which the germs of dissension—chiefly jealousy against the influence of Judah—had been silently growing up for many a year, split under Rehoboam into two sections (B.C. 975): the kingdom of Judah, under Rehoboam, son of Solomon; and the kingdom of Israel, under Jeroboam, the Ephramite. The former of these countries comprised the two tribes of Judah and Benjamin, together probably with some Danite and Simeonite cities; the latter, the remaining ten tribes. After 19 kings, of different dynasties, among whom Jeroboam, Ahab, Joram, Jeroboam II., Pekah may be mentioned, had reigned in Israel, few of whom succeeded to the throne otherwise than by the murder of their predecessors, the country was finally conquered by Salmanassar, King of Assyria; its sovereign, Hoshea, thrown into prison; the mass of the people carried away captive (B.C. 720) into the far east, the mountainous regions of Media; and their place supplied by Assyrian colonists, brought from Babylon, Persia, Shushan, Elam and other places by Asnappar. These, mingling and in

termarrying with the remnant of the Israelites, formed the mixed people called Samaritans (q.v.). Among the 20 kings of the House of David who ruled over Judah, Jehoshaphat, Uzziah, Hezekiah, and Josiah distinguished themselves both by their abilities as rulers, and by their zeal for the worship of Jehovah. Yet even they were, for the most part, unable to stay the idolatrous practices of the people, against which the stern prophets' voices even could not prevail. Other kings were, for the most part, more or less unfaithful themselves to the religion of their fathers, and unable to withstand the power of the Egyptians, Assyrians, and Babylonians, to each of whom they in turn became tributary, until at last Nebuchadnezzar stormed Jerusalem (B.C. 588), plundered and burned the temple, put out the eyes of King Zedekiah, and carried off the most illustrious and wealthy of the inhabitants prisoners to Babylon. The Israelites, who had been exiled 134 years before the inhabitants of Judah, never returned. What became of those 10 tribes has always been, and, we presume, will remain, matter of vaguest speculation. See **BABYLONIAN CAPTIVITY**.

All that we know of the condition of the Hebrews during the captivity, relates exclusively to the inhabitants of the kingdom of Judah. And so mild, especially during the later years, was the treatment which they received in the Babylonian empire, that when liberty was announced to the whole body of the captives, only the lowest of the low returned, together with the Levites and Priests (cf. Talm. Kidd. iv. 1). The Book of Esther likewise bears testimony to the vast numbers that had remained scattered over the vast empire. See **BABYLONIAN CAPTIVITY**.

The influence of this exile, however, was of a most striking and lasting nature. Babylon henceforth became and remained, till about A.D. 1000, the 'second land of Israel'—in many respects even more highly prized than Palestine. To the brief period of this captivity must be traced many of the most important institutions of the synagogue in its wider sense. Common religious meetings, with prayer, were established; many of the Mosaic laws were re-enforced in their primitive rigor; and the body of the 'oral law' began to shape itself, however rudely, then and there. Besides, there began to grow up and unfold itself from the original germ the belief in a Messiah, a Deliverer, one who should redeem the people from their bondage. The writer of the last 27 chapters of Isaiah, called by many modern scholars the 'Younger Isaiah,' in accordance with their theory of the authorship of that book (see **ISAIAH**), is held by these scholars to belong to this period, and expresses in glowing language the hopes of the exiles; no less do many of the Psalms belong to this time. 'From this period, likewise, the immortality of the soul, and the belief in another life, appear more distinctly in the popular creed, in which . . . they had been obscured by the more immediate hopes and apprehensions of temporal rewards and punishments revealed in the law. But in the writings of the Babylonian prophets, in the vision of dry

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'bones in Ezekiel, and in the last chapter of Daniel, these doctrines assume a more important place; and from the later books, usually called the Apocrypha, these opinions appear to have entered into the general belief. In other respects, particularly in their notion of angels, who now appear under particular names, and forming a sort of hierarchy, Jewish opinions acquired a new and peculiar coloring from their intercourse with the Babylonians' (Dean Milman's *History of the Jews*, Lond. 1829, II., 13, 14). See ANGELS: DEMONS: DEVIL.

The exile is generally computed to have lasted 70 years. This is not strictly correct; it lasted 70 years, if reckoned from the appearance of Nebuchadnezzar in Anterior Asia (606), but only 52 years from the destruction of Jerusalem. When Cyrus, the Persian king, had overthrown the Babylonian kingdom (B.C. 538), the condition of the Hebrews improved considerably. The new monarch must have felt that he could rely on them, as being really strangers in the land, and necessarily more or less hostile to their conquerors, the Babylonians. The Hebrew prophet Daniel rose higher and higher in dignity and power, and finally became 'supreme head of the pashas to whom the provinces of the vast Persian empire were committed.' Through his influence, Cyrus was prevailed on to issue an edict permitting the exiles to return home. A minute account of the circumstances attending this joyous event is given in the Books of Ezra and Nehemiah. More than 40,000 persons, including four of the 24 courses of priests, set out under the leadership of Zerubbabel, descendant of their line of kings.

Notwithstanding the many and harassing obstacles raised by the Samaritans—the mixed people of Assyrians and Israelites, against whom the scrupulous exiles entertained strong religious and national objections—the rebuilding of the 'Temple of the Lord' was at last commenced in the first year of Darius, and in the sixth year of his reign it was completed (see HAGGAI: ZACHARIAH). The waste cities were likewise rebuilt and repeopled. During the long reign of Darius, the J. were blessed with a high degree of material prosperity. Under his successor, Xerxes, probably occurred the incidents recorded in the Book of Esther. In the seventh year of Artaxerxes, the successor of Xerxes, Ezra the priest, invested with high powers, and accompanied with a great retinue of his professional brethren, headed a second migration. 13 years later, during the reign of the same monarch, Nehemiah, his cup-bearer, but a man of Jewish family, was ordered to proceed to Jerusalem, and, aided by Ezra and others, succeeded in secretly fortifying the city, notwithstanding the continuous opposition from Samaritans, Ammonites, and Arabians. The strictest observance of the 'written law', even of those of its parts which had been for some reason or other disregarded, was now rigorously enforced, and many 'oral ordinances' were put into practice, which do not seem to have been much heard of previously. The supreme spiritual authority was vested in a society of pious and pre-eminently learned men,

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founded by Ezra, out of which grew the 'Great Synagogue,' whose existence modern scholars no longer see any reason to doubt. The compilation and transcription of the sacred records began, periodical public readings and expoundings of the law were instituted, and the vast Targumic, as well as the so-called rabbinical literature, generally dates—in its earliest beginnings—from this point. During the life of Nehemiah, the breach between the J. and Samaritans became final, by the erection on Mount Gerizim (near Samaria) of a rival temple to that at Jerusalem, and the creation of a rival priesthood. For more than a hundred years, the J. lived quietly under the Persian yoke, too insignificant to excite any attention from the Greeks then in the full meridian of their political and literary greatness; and scanty are the accounts which, as yet, have been brought to light out of the mazes of ancient Jewish literature with respect to the inner intellectual life of the J. during that period. That, though silent, it must have been extremely active and rich, is amply evidenced by the sudden appearance, immediately afterward, of a vast number of literary productions.

Alexander the Great, on his way to conquer the whole East, did not deem it necessary to storm Jerusalem. The inhabitants submitted, and he even deigned to have sacrifices offered on his behalf to the national god of his new subjects, a great number of whom, and of Samaritans, he carried away to Egypt (where J. were supposed to have immigrated as early as the time of the last kings of Judah, and later under Artaxerxes Ochus), and peopled a third of his newly-founded city Alexandria with his Jewish captives. After him, Ptolemy the son of Lagos, surnamed *Soter*, one of Alexander's generals, who had become king of Egypt, invaded Syria, took Jerusalem (B.C. 301), and carried off 100,000 of its inhabitants, whom he forced to settle chiefly in Alexandria and Cyrene. The Egyptian (Alexandrian) 'Dispersion' (Golah)—destined to be of vastest importance in the development of both Judaism and Christianity—gradually spread over the whole country, from the Libyan desert in the n. to the boundaries of Ethiopia in the s., over the Cyrenaica and part of Libya, and along the African coasts of the Mediterranean. They enjoyed equal rights with their fellow-subjects, both Egyptian and Greek, and were admitted to the highest dignities and offices; so that many further immigrants followed of their own free-will. The free development which was allowed them, enabled them to reach, under Greek auspices, the highest eminence in science and art. In Greek strategy and Greek statesmanship, Greek learning and Greek refinement, they were ready and brilliant disciples; even their artisans and workmen were sent for by distant countries. From the number of Judæo-Greek fragments, historical, didactic, epic, etc. (by Demetrios, Malchos, Eupolemos, Artapan, Aristæos, Jason, Ezechielos, Philo, Theodot, etc.) which have survived, we may easily conclude what an immense literature must have sprung up here within a few centuries in the midst of the

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Judæo-Egyptian community. To this is owing, likewise, the Greek translation of the Bible, known as the Septuagint (q.v.), which in its turn, while it estranged the people more and more from the language of their fathers, the Hebrew, gave rise to a vast pseudo-epigraphical and apocryphal literature (Orphica, Sybillines; Pseudophoclea; poems by Linus, Homer, Hesiod; additions to Esther, Ezra, the Maccabees, Book of Wisdom, Baruch, Jeremiah, Susannah, etc.), beside the peculiar Græco-Jewish philosophy, which sprang from a mixture of Hellenism and Orientalism; for which see Gnostics.

For a hundred years, Judæa itself remained under Egyptian rule. During the reigns of the first three Ptolemies, Soter, Philadelphus, and Euergetes, it prospered; but after the accession of Ptolemy Philopator, a change for the worse came over the fortunes of the Jews. Their fate became harder still under his son, Antiochus Epiphanes, or Epimanes (the Madman). With every means that a cruel and foolhardy policy could devise, this king outraged the religious feelings of the nation, and endeavored to tear out every root of the sacred creed. At different periods he sent his generals to Jerusalem to pillage and burn, and to force the Jews into the Greek religion. The temple at Jerusalem was finally dedicated to Jupiter Olympius; idol altars were built in every village, and the people forced to offer swine daily. Some yielded, many fled, the greater part preferred martyrdom in some shape or other.

At this juncture the heroic family of Matathia, priest of the house of the Asmoneans, rose, together with a few patriots, against the immense power of the Syrians. The national cause quickly gathered strength, and after the death of Matathia (B.C. 166), Judas Maccabæus (q.v.) led the national hosts to victory against the Syrians. After his death (B.C. 161) his brothers Jonathan and Simon completed the work of deliverance, and re-instituted the Sanhedrim (B.C. 145). During their rule, alliances were twice formed with the Romans, and the country once more began to prosper. Under Simon especially, Syrian rule became a mere shadow: his was an almost absolute power, so much so indeed that in 170 of the Seleucidian era (B.C. 142), a new Jewish era was commenced, and public documents bore date, 'In the first year of Simon, high-priest and chief of the Jews.' Simon's son, John Hyrcanus, after a brief vassalage to the Syrians, extended his authority over Samaria, Galilee, and Idumea—his grand triumph, in the eyes of his countrymen, being the destruction of the Samaritan temple on Mount Gerizim (B.C. 129); but in reality his most surprising success was the subjugation of the Idumeans, and their conversion to the Jewish religion. His son, Aristobulus, added Iturea—a district at the base of the Anti-Libanus—to his dominions, but after a short reign, died of remorse for the murder of his mother, Salome Alexandra, to whom the secular dominion had been bequeathed by Hyrcanus, but whom Aristobulus had cast into prison, and caused there to die of

hunger. The son who succeeded him was Alexander Jannæus. Constantly fighting, and generally beaten, this king strangely contrived to enlarge his territories; restless and enterprising, as he was cruel and sanguinary, he gave his opponents no rest, and his opponents were all his neighbors in turn, excepting Cleopatra, Queen of Egypt. Attached to the Sadducees (q.v.) like his father, and probably something of a pagan, he was disliked by the mass of his countrymen, and a civil war of six years duration ensued. After a brief period of peace, he died (B.C. 78), recommending, however, his wife, Alexandra, to throw herself into the arms of the very party who had thwarted him all his life, the Pharisees (q.v.), as the best way of retaining her authority. This she did; and governed, on the whole, prudently for nine years. The Pharisaic party, however, abused the power which fell into their hands, and a reaction took place. Aristobulus, youngest son of the queen, and a prince of great spirit, placed himself at the head of the movement, marched to Jerusalem, took possession of the city, and ejected his elder brother, Hyrcanus II., from the sovereignty. Afterward, however, the latter, at the instigation of Antipater, the Idumean, and father of Herod the Great, fled to Aretas, King of N. Arabia, who was induced, by the promise of a cession of the territory which had been acquired by Alexander Jannæus, to take up arms on his behalf. This led to the interference of the Romans, who were then fighting both in Syria and Armenia. After several vicissitudes, Jerusalem was captured (B.C. 63), by Pompey, who had decided in favor of Hyrcanus; and Judæa was made dependent on the Roman province of Syria, and Hyrcanus was appointed ethnarch and high-priest. Aristobul, however, with his two sons, Alexander and Antigonus, and two daughters, were carried captive to Rome.

B.C. 54, Licinius Crassus plundered the temple, which Pompey had piously spared; his ill-gotten gains are said to have amounted to a value of \$10,000,000. He fell shortly afterward in the war against the Parthians, and his companion, Cassius Longinus, succeeded in completely routing Aristobul's army.

Meanwhile, the war between Cæsar and Pompey broke out. In Syria, the partisans of the latter were numerous, and contrived to poison Aristobulus and put to death his son Alexander, who were Cæsareans (B.C. 49). After the death of Pompey, however, things changed; and Hyrcanus, or rather Antipater the Idumean (who was both his minister and master), saw the necessity of securing the favor of Cæsar. With Hyrcanus II. ended the line of *Asmonean* princes; they exercised (nominally) supreme authority both in the civil and religious affairs of Palestine, i.e., they were both sovereigns and high-priests; but, as we have already indicated, the real religious authority had passed into the hands of the priesthood, especially of the Sanhedrim (q.v.). The *Idumean* dynasty, which succeeded the *Asmonean*, virtually commenced with Antipater, who prevailed on Cæsar to restrict Hyrcanus

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to the high-priesthood, and obtained for himself the office of procurator of Judæa, while his eldest son Phazael was appointed gov. of Jerusalem, and his younger son Herod gov. of Galilee. The Jewish or national party took alarm at this sudden increase of Idumean power; strife ensued; and ultimately Antipater perished by poison; but Herod, by the assistance of the Romans, finally entered Jerusalem in triumph (B.C. 37), caused Antigonus, the last male representative of the Asmonean line, and his most dangerous enemy, to be put to death, and commenced the difficult task of governing a people who were growing more and more unruly every day. For political events during the government of the Herods, see **HEROD: AGRIPPA: ANTIPATER.**

After Herod's death (B.C. 3, about one year after the birth of Christ), Archelaus, one of his sons, ruled Judæa and Samaria; but his arbitrariness, and still more his constant attacks on religion, made him hateful to the people; and Augustus, listening to their just complaints, deprived him of his power, and banished him to Vienne (A.D. 6). Judæa was now thrown together with Syria, and was ruled by Roman governors.

In A.D. 38, Emperor Caligula issued an edict ordering divine honors to be paid to himself. Everywhere throughout the Roman dominions the J. refused to obey. At Alexandria, a frightful massacre took place, and for a moment it seemed as if the whole population of Judæa, too, were doomed to perish; but Herod Agrippa I. (q.v.), tetrarch of N. Palestine, a friend of Caligula, dissuaded the emperor from his barbarous design. About the same time, the Babylonian J. became involved in a quarrel with the Parthians, and were slaughtered in vast numbers. The accession of Claudius, on the assassination of Caligula, seemed, however, the dawn of a brighter day for them. Herod Agrippa, loyal friend and favorite of the new emperor, obtained anew the dominion over all the parts once ruled by his grandfather Herod, and many privileges were through his influence granted to his Jewish subjects, and even to foreign Jews. They received the rights of Roman citizenship (A.D. 41), and Herod even tried to conciliate their religious prejudices by the strictness with which he observed their law—which may account for his persecution of the Christians; yet the national party remained malcontent, and in almost permanent mutiny. After the death of Herod Agrippa I. (his son being but a youth of 17) the country was again subjected to Roman governors. The confusion soon became indescribable. The whole land was overrun with robbers and assassins, some of whom professed to be animated by religious motives (such as the Sicarii), while others were mere ruffianly freebooters and cut-throats; the antipathy between J. and Samaritans waxed fiercer and fiercer, and the latter waylaid and murdered the orthodox Galileans as they went up to worship at Jerusalem; all sorts of impostors, fanatics, and pretenders to magic made their appearance; the priesthood was riven by dissensions; the hatreds between the populace and

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the Roman soldier (mostly of Græco-Syrian origin, and under the commands of cruel procurators, such as Albinus and Gessius Florus) increased; frightful portents (according to Josephus) appeared in the heavens, until A.D. 66, in spite of all precautionary efforts taken by Agrippa, the party of Zealots, i.e., the Sicarii or Assassins, burst into open rebellion, which, after a horrible carnage (Josephus calculates the number killed at 1,356,460), was terminated (70) by the conquest of Jerusalem by Titus, the destruction of the temple, and the massacre and banishment of hundreds of thousands of the unhappy people, who were scattered among their brethren in all parts of the world. The defense of Jerusalem (as narrated by Josephus) is one of the most magnificent and melancholy examples of mingled heroism and insanity that the world affords. Still, considerable numbers were allowed to remain in their native country, and for the next 30 years, though both hated and treated with rigor, they appear on the whole to have flourished. Emperor Nerva was as lenient to them as to the rest of his subjects; but as soon as they had attained some political vitality, their turbulent and fanatical spirit broke out anew. Their last attempts to throw off the Roman yoke, at Cyrene (115), Cyprus (116), Mesopotamia (118), and Palestine, under Bar-Cochba (q.v.), (130), were defeated after enormous and almost incredible butchery. The suppression of Bar-Cochba's insurrection (135) marks the final desolation of Judæa, and the dispersion of its inhabitants. Talmud and Midrash (especially *Midrash Echa*) appear to exhaust even eastern extravagance in describing what followed the capture of Bithēr—the great stronghold of the Jews. The whole of Judæa was made like a desert, about 985 towns and villages lay in ashes, 50 fortresses were razed to the ground; the name of Jerusalem itself was changed into *Ælia Capitolina*, and a heathen colony settled in the city, from entering which every Jew was strictly debarred. The hardships to which the unfortunate race were subjected, were again alleviated in the reign of Antoninus Pius, whom the Jewish writers represent as secretly attached to their religion (see Jost's *Geschichte der Israeliten*, etc.); and better times seemed in store for the homeless exiles. Alexander Severus also placed Abraham on the same divine level as he did Christ, and obtained from the grateful people the title of 'Father of the Synagogue.' Heliogabalus, among his many senseless wh'ims, patronized various Jewish practices, such as circumcision and abstinence from swine's flesh; and generally speaking, from the close of the 2d c. till the establishment of Christianity under Constantine (330), when their hopes were once more dashed to the ground, the J. of the Roman empire appear to have thriven astonishingly. In this period falls the redaction of the chief code and basis of the 'Oral Law,' the Mishna (q.v.) completed by Jehuda Hanassi (the Prince), or *Hakkadosh* (the Saint), president of the great school at Tiberias (220); upon which code were grafted subsequently the two gigantic commentaries or complements, the Palestinian and the Babylonian Gemaras

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{q.v.}. The Babylonian J. were even more fortunate than their western brethren, though they did not perhaps attain the meridian of their prosperity till the revival of the Persian, on the downfall of the Parthian empire. Their leader was called 'The Prince of the Captivity' (*Resh Gelutha*), and was chosen from among those held to be descended from the House of David. He lived in great splendor, assumed among his own people the style of a monarch (though extremely submissive to the Parthian or Persian ruler), had a bodyguard, counselors, cupbearers, etc.; his subjects were, many of them, at least, extremely wealthy, and pursued all sorts of industrial occupations. They were merchants, bankers, artisans, husbandmen, and shepherds: and in particular had the reputation of being the best weavers of the then famous Babylonian garments. In fact, his government was quite an *imperium in imperio*, and possessed a thoroughly sacerdotal or at least theocratic character. The reputation for learning of the Babylonian schools, Nahardea, Sura, and Pumbeditha, was very great. What was their condition at this time further east, is not known; but it seems certain that they had obtained a footing in China, if not before the time of Christ, at least during the first century. The Jews in China were discovered first by the Jesuit missionaries of the 17th c. They did not appear ever to have heard of Christ, but they possessed the Book of Ezra, and retained, on the whole, a decided nationalism of creed and character. From their language, it was inferred that they had come originally from Persia. At one time, they appear to have been highly honored in China, and to have held the highest civil and military offices.

Reverting to Europe, the ascendancy of Christianity—or rather of a nominally Christian ecclesiasticism such as Christ had never authorized—was, as we have already said, baneful to the Jews. Imperial edicts and ecclesiastical decrees vied with each other in the rigor of their intolerance toward this unhappy people. They were prohibited from making converts, from invoking (in Spain at least) the divine blessing on the country, from marrying Christian women or holding Christian slaves; they were burdened with heavy taxes; yet no persecution apparently could destroy the immortal race. About this time, they are found in large numbers in Illyria, Italy, Spain, Minorca, Gaul, and the Roman towns on the Rhine; they are agriculturists, traders, and artisans; they hold land; their services, in fact, cannot be dispensed with; Constantine, during whose reign a fierce revolution, incited by his co-regent, Gallus, broke out among the Arians and Jews (353), terms them, in a public document, 'that most hateful of all people;' yet in spite of this, they fill important civil and military situations, have special courts of justice, and exercise the influence that springs from the possession of wealth, knowledge, and mental capacity. The brief rule of Julian the Apostate even shed a momentary gleam over their destinies, and the transport which they manifested on obtaining his permission to rebuild the temple at Jerusalem, is one of the most sub-

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lime spectacles in their history. The death of this emperor, however, frustrated their labors, and the rapid increase of ecclesiastical power was, of course, hurtful to them in a variety of ways, though the emperors now began, in the decline of their authority, to protect them as far as they could. In 418 they were excluded from the military service; and in 429 the patriarchate at Tiberias was abolished. After the fall of the West Roman empire, their fortunes were different in different countries. In Italy, Sicily, and Sardinia, they were for a time almost unmolested; in the Byzantine empire they suffered many oppressions: in the 6th and 7th c. the Franks and Spanish Visigoths inflicted on them frightful persecutions.

The sudden volcanic outburst of Mohammedanism in the Arabian peninsula, was at first disastrous to the J. in that part of the world. For several centuries, a Jewish kingdom had existed in the s.w. of Arabia. It was called Himyaritis or Homeritis, and was in a flourishing condition B.C. 120. About A.D. 230 the Jewish religion even mounted the throne of Yemen. Twice, however (by the Ethiopian kings, Aidog and Ez-Baha), were the Jewish kings driven from it, and the Christian religion was introduced in that part 530. At first, Jewish tribes around Mecca and Medina entertained opinions favorable to Mohammed as an Arabian chief, but when Islam began to threaten their own faith and even existence, they rose in arms against its founder. Mohammed proved the stronger: he subdued the Chaibar tribes 627; and the Arabian J. were finally dispossessed of their territories, and removed to Syria. The spread of Mohammedanism through Asiatic Turkey, Persia, Egypt, Africa, and the south of Spain was, nevertheless, on the whole advantageous to the Jews. Excepting accidental persecutions, such as those in Mauritania (790) and in Egypt (1010), they had, under the caliphs and Arabian princes, comparative peace. In Moorish Spain their numbers greatly increased, and they became famous for learning as well as for trade. They were counselors, secretaries, astrologers, or physicians to the Moorish rulers; and this period may well be considered the golden age of Jewish literature. Poets, orators, philosophers of highest eminence arose, not isolated, but in considerable numbers; and it is a well-established fact that to them chiefly is due—through the Arab medium—the preservation and subsequent spreading of ancient classical literature, especially philosophy, in Europe. There are some medical works belonging to ancient Greece even now extant only in Arabic translations by Jews, the originals being probably lost for ever. Different from their fate under Moslem rule was that which they had to endure in Christendom about this period. Only few and far between were those Christian monarchs who rose above the barbarism of the ecclesiastics. About the beginning of the 11th c., the Byzantine emperor, Basil II., renewed the persecution; from quite different causes, the same thing had already begun in Babylonia, where the caliphate had passed into the hands of rulers hostile to the J.; and before the close of the 11th c., the Prince of the Captivity had perished on the scaffold, the

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schools were closed, the best of the community had fled to Spain, and those that remained were reduced to an abject condition, from which they have never risen. In Italy, their position was made tolerable through considerable pecuniary sacrifices. Here and there, at intervals, a spirit of intolerance might break out, but they held for the most part the protection of the popes.

More favorable was their lot during the 8th and 9th c. in France, especially in Paris, Lyon, Languedoc, and Provence. At the court of *Louis le Débonnaire*, they were actually powerful. After 877, however, when the weak Carolingians had begun to rule, and the church was advancing with imperious strides, a melancholy change ensued—kings, bishops, feudal barons, and even the municipalities, all joined in a carnival of persecution. From the 11th to the 14th c., their history is a successive series of massacres. All manner of wild stories were circulated against them: it was said that they were wont to steal the host, and to contemptuously stick it through and through; to inveigle Christian children into their houses, and murder them; to poison wells, etc. They were also hated for their excessive usury, though there can be no doubt that more blame is attachable to those whose tyranny, by depriving them of the right to possess land, had compressed their activity into the narrower channels of traffic. Occasionally, however, their debtors, high and low, had recourse to what they called Christian religion as a very easy means of getting rid of their obligations. Thus, Philippe Auguste, under whose rule the Jews seem to have held mortgages of enormous value on the estates of church and state dignitaries, simply confiscated the debts due them, forced them to surrender the pledges in their possession, seized their goods, and banished them from France; but the decree appears to have taken effect chiefly in the north; yet in less than 20 years, the same proud but wasteful monarch was glad to let them come back and take up their abode in Paris. Louis IX., a very pious prince, among other religious acts, cancelled a third of the claims which the J. had against his subjects, 'for the benefit of his soul.' An edict was also issued for the seizure and destruction of their sacred books; and we are told that, at Paris, 24 carts filled with copies of the *Talmud*. etc., were consigned to the flames. In the reign of Philippe the Fair, they were again expelled from France (1306) with the usual accompaniments of cruelty; but the state of the royal finances rendered it necessary, in a little more than a dozen years, to recall them; and they were allowed to enforce payment of the debts due them, on condition that two-thirds of the whole should be given up to the king! But a religious epidemic, known as the Rising of the Shepherds, having seized the common people in Languedoc and the central regions of France (1321), signalized itself by horrible massacres of the detested race; so horrible, indeed, that in one place, Verdun, on the Garonne, the J., in the madness of their agony, threw down their children to the *Christian* mob, from the tower in which they were gathered

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hoping, but in vain, to appease the demoniacal fury of their assailants. In the following year, the plague broke out, and the wildest crimes were laid to their charge. One shudders to read of what followed; in whole provinces every Jew was burned. *At Chinon, a deep ditch was dug, an enormous pile raised, and 160 of both sexes burned together!* Yet Christianity never produced more resolute martyrs; as they sprang into the place of torment, they sang hymns as though they were going to a wedding. Finally, 1395, they were indefinitely banished from central France.

Their first appearance in England dates from the period of the Saxons. They are mentioned in the ecclesiastical constitutions of Egbricht, Abp. of York, 740; they are named also in a charter to the monks of Croyland, 833. William the Conqueror and his son, William Rufus, favored them; the latter, on the occasion of a public debate between them and the Christians, even swore with humorous profanity, that if the rabbins beat the bishops, 'by the face of St. Luke,' he would turn a Jew himself. The same reckless monarch carried his contempt for the religious institutions of his kingdom so far, that he actually farmed out the vacant bishoprics to the J.; and at Oxford, even then a seat of learning, they possessed three halls—Lombard Hall, Moses Hall, and Jacob Hall, where Hebrew was taught to Christians as well as to the youths of their own persuasion. As they grew in wealth, they grew in unpopularity. On the day of the coronation of Richard the Lion Heart (1189), some foreign J. being perceived to witness the spectacle, from which their nation had been strictly excluded, a popular commotion against them broke out in London; their houses were pillaged and burned; and though Sir Richard Glanville, chief-justiciary of the realm, acting under the orders of the indignant king, partially succeeded in arresting the havoc, and even in bringing some of the mob to justice (three were hanged), yet the barbarous bigotry of priests and people prevented anything like just or salutary punishment. Similar scenes were witnessed at Norwich, Edmundsbury, Stamford, and York; in the last of these towns, most of the J. preferred voluntary martyrdom (*Kiddush Hashem*) in the synagogue to forced baptism. When Richard returned from Palestine, their prospects brightened a little; though still treated with great rigor, yet their lives and wealth were protected—for a consideration! John Lackland at first covered them with honor, but the popular and priestly hatred only became the stronger; and on a sudden, the vacillating and unprincipled king turned against his protégés, after they had accumulated great wealth, and imprisoned, maltreated, and plundered them in all parts of the country. Under Henry III., they were mulcted enormously. Accused of clipping the coin of the realm, they had, as a penalty, to pay into the royal exchequer (1230) a third of their movable property. To this reign belongs the now exploded story of the crucifixion of the Christian boy, *Hugh of Lincoln*. The accession of Edward did not mitigate their misery; some efforts, indeed,

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were made to induce them to give up their profession of usury, as also in France and elsewhere during the same period; but the fact is, that they were so heavily taxed by the sovereigns or governments of Christendom, and at the same time debarred from almost every other trade or occupation—partly by special decrees, partly by the vulgar prejudice—that they could not afford to prosecute ordinary avocations. The attempt made by the Dominican friars to convert them, of course failed utterly; and 1253, the J.—no longer able to withstand the constant hardships to which they were subjected in person and property—begged of their own accord to be allowed to leave the country. Richard of Cornwall, however, persuaded them to stay. Ultimately, 1290, they were driven from the shores of England, pursued by the execrations of the infuriated rabble, and leaving in the hands of the king all their property, debts, obligations, and mortgages. They emigrated for the most part to France and Germany. Their number is estimated at about 16,000.

In Germany, they were considered the special property of the sovereign, who bought and sold them, and were designated his *Kammerknechte* ('chamber-servants'). As above said, they made their appearance in that region almost as early as the time of Constantine. About the 8th c., they are found in all the Rhenish towns; in the 10th c., in Saxony and Bohemia; in the 11th, in Swabia, Franconia, and Vienna; and in the 12th, in Bradenburg and Silesia. The same sort of treatment befell them in the empire as elsewhere; they had to pay all manner of iniquitous taxes—body-tax, capitation-tax, trade-taxes, coronation-tax, and to present a multitude of gifts, to mollify the avarice or supply the necessities of emperors, princes, and barons. A raid against the J. was a favorite pastime of a bankrupt noble in those days. The Crusades kindled a spirit not in Germany only, however, but through all Christendom, hostile to the 'enemies of Christ.' Treves, Metz, Cologne, Mainz, Worms, Spire, Strasburg, and other cities, were deluged with the blood of the 'unbelievers.' At such epochs, the passions of the populace and of the lower clergy could not be restrained. The word *Hep* (said to be the initials of *Hierosolyma est perdita*, Jerusalem is taken) throughout all the cities of the empire became the signal for massacre, and if an insensate monk sounded it along the streets, it threw the rabble into paroxysms of murderous rage. The J. were expelled—after being plundered and maltreated—from Vienna (1196), Mecklenburg (1225), Breslau (1226), Bradenburg (1243), Frankfurt (1241), Munich (1285), Nürnberg (1390), Prague (1391), and Ratisbon (1476). The 'Black Death,' in particular, occasioned a great and widespread persecution (1348–50). They were murdered and burned by thousands, and many even sought death amid the conflagrations of their synagogues. The race almost disappeared from Germany; only, however, to return, for their services were indispensable. Only here and there, however, they possessed the rights of citizens, or were allowed to hold unmovable property; in general, they were

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permitted to prosecute only commerce and usury, and the law turned on them its harshest aspect. Repeatedly, too, the emperors gratified at once their piety and their greed by cancelling their pecuniary claims. In many places, they were compelled to live in certain parts of the town, known as the *Judenstrasse* (Jews' Streets).

Switzerland, whither they came at a comparatively late period, commenced to persecute them about the middle of the 14th c. In the 15th c., they were expelled from Schaffhausen, Zürich, Geneva, Thurgau, and other places.—Their treatment was more humane in Poland and Lithuania. As early as 1264, they had in these countries certain important privileges. Favored by Casimir III., their numbers were swelled, after 1348, by fugitives from Germany and Switzerland.—Russia and Hungary, like most other countries of Christendom during the middle ages, received, persecuted, and banished them.

In Spain, the condition of the J. was long highly favorable. The horrible persecutions of the Gothic princes in the 6th and 7th c., made it inevitable that the first gleam of a Moorish scimitar on the coast would turn the J. into allies of the invaders. During the whole of the brilliant period of Moorish rule in the Peninsula, they had indeed, what must have seemed to them in comparison with their common fate, a sort of Elysian life. They were almost on terms of equality with their Mohammedan masters, rivalled them in civilization and letters, and probably surpassed them in wealth. The Spanish J. were consequently of much higher type than their brethren in other parts of Europe. They were not reduced to the one degrading occupation of usury, though they followed that too; they were husbandmen, landed proprietors, physicians, financial administrators, etc.; they enjoyed special privileges, and had courts of justice for themselves. Nor was this state of things confined to those portions of Spain under the sovereignty of the Moors; the Christian monarchs of the north and middle gradually came to appreciate the value of their services, and we find them for a time protected and encouraged by the rulers of Aragon and Castile. But the extravagance and consequent poverty of the nobles, as well as the increasing power of the priesthood, ultimately brought a disastrous change. The estates of the nobles and (it is believed) those attached to the cathedrals and churches, were in many cases mortgaged to the J.; hence it was not difficult for 'conscience' to raise a persecution, when goaded to its 'duty' by the pressure of want and shame. Gradually, the J. were deprived of the privilege of living where they pleased; their rights were diminished, and their taxes augmented. In Seville, Cordova, Toledo, Valencia, Catalonia, and the island of Majorca, outbursts of priestly and popular violence took place (1391-2); immense numbers were murdered, and wholesale theft was perpetrated by the religious rabble. Escape was possible only through flight to Africa, or by accepting baptism at the point of the sword. The number of these enforced converts to Christianity is reckoned at

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200,000. The fate of the J. in Spain during the 15th c., however, beggars description. Persecution, violent conversion, massacre, the tortures of the inquisition—we read of nothing but these! Thousands were burned alive. ‘In one year, 280 were burned in Seville alone.’ Sometimes the popes, and even the nobles shuddered at the fiendish zeal of the inquisitors, and tried to mitigate it, but in vain. At length the hour of final horror came. In 1492, Ferdinand and Isabella issued an edict for the expulsion, within four months, of all who refused to become Christians, with the strict inhibition to take neither gold nor silver out of the country. The J. offered an enormous sum for its revocation, and for a moment the sovereigns hesitated; but Torquemada, the Dominican inquisitor-general, dared to compare his royal master and mistress to Judas; they shrank from the awful accusation; and the ruin of the most industrious, the most thriving, the most peaceable, and the most learned of their subjects—and consequently of Spain herself—became irremediable. This is perhaps the grandest and most melancholy hour in their modern history. It is considered by themselves as great a calamity as the destruction of Jerusalem. 300,000 (some even give the numbers at 650,000 or 800,000) resolved to abandon the country, which a residence of seven centuries had made almost a second Judæa to them. The incidents that marked their departure are heartrending. Almost every land was shut against them. Some, however, ventured into France; others into Italy, Turkey, and Morocco, in the last of which countries they suffered the most frightful privations. Of the 80,000 who obtained an entrance into Portugal on payment of eight gold pennies a head, but only for eight months, to enable them to obtain means of departure to other countries, many lingered after the expiry of the appointed time, and the poorer were sold as slaves. In 1495, King Emanuel commanded them to quit his territories, but at the same time issued a secret order that all Jewish children under 14 years of age should be torn from their mothers, retained in Portugal, and brought up as Christians. Agony drove the Jewish mothers into madness: they destroyed their children with their own hands, and threw them into wells and rivers, to prevent them from falling into the hands of their persecutors. The miseries of those who embraced Christianity, but who, for the most part, secretly adhered to their old faith (*Onssim*, *Anussim*—‘yielding to violence, forced ones’), were hardly less dreadful, and it was far on in the 17th c. before persecution ceased. *Autos da Fé* of suspected converts happened as late as 1655.

The wanderers appear to have met much better treatment in Italy and Turkey than anywhere else. During the 15th and 16th c., they are found—except at intervals, when persecution applied its scourge—in almost every city of Italy; pursuing various kinds of traffic (nearly the whole trade of the Levant, for instance, was in their hands), but engaged chiefly in money-lending, in which they rivalled the great Lombard bankers. Abrabanel, perhaps the most

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eminent Jewish scholar and divine of his day, rose to be confidential adviser to the king of Naples. In Turkey, they were held in higher estimation than the conquered Greeks; the latter were termed *Teshir* (slaves), but the Jews, *Monsaphir* (visitors); they were allowed to re-open their schools, to establish synagogues, and to settle in all the commercial towns of the Levant.

The invention of printing, the revival of learning, and the Reformation, are generally asserted to have been beneficial to the J., but this can be regarded as true only in a certain sense. When the J. began to use the presses at their earliest stage for their own literature, sacred and otherwise, Emperor Maximilian was urged—chiefly by converts—to order all Hebrew writings to be committed to the flames; and but for the strenuous exertions of Reuchlin (q.v.), ignorance, treachery, and bigotry might have secured a despicable triumph. Luther, in the earlier part of his career at least, looked with no unfavorable eye on the adoption of violent means for their conversion; and, on the other hand, we find at least one distinguished Rom. Catholic, Pope Sextus V., animated by a far more wise and kindly spirit toward them than any Protestant prince of his time. In 1588, he abolished all the persecuting statutes of his predecessors, allowed them to settle and trade in every city of his dominions, to enjoy the free exercise of their religion, and, in respect to the administration of justice and taxation, placed them on a footing with the rest of his subjects. That the Reformation itself had nothing to do with subsequent ameliorations in the condition of the J., is only too plain from the fact, that in many parts of Germany, Prot. as well as Rom. Cath., their lot became actually harder than before. They were driven out of Bavaria (1553), out of Brandenburg (1573), and similar treatment befell them elsewhere. Numerous popular tumults also were excited against them (as late even as 1730 in the Prot. city of Hamburg); and, in fact, during the whole of the 17th and the first part of the 18th c., the hardships inflicted on them by the German governments became more and more grievous. What really caused the change in their favor was the great uprising of human reasonableness that marked the middle of the 18th c. Among writers who distinguished themselves in Germany by pleading the cause of the J., should be mentioned Lessing (q.v.) Mendelssohn (q.v.), and Dohm.

Holland, as we know, was one of the first countries in modern times to rise out of the barbarism of the middle ages. Its active, energetic, intelligent inhabitants appreciated the business qualifications of the J., and as early as 1603, permitted them to settle and trade, though they did not acquire the rights of citizenship till 1796. In England, the edict of Edward I, remained in force more than 300 years; and the first attempt made by the J. to obtain a legal recognition in that country was during the Protectorate of Cromwell 1655. Cromwell himself, according to his tolerant nature, was favorable to their admission; so were the lawyers, according to their custom of using reason; but the nation

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generally, particularly the emphatically religious portion of it, were strongly hostile to their admission; and the wearisome, controversial jangling of the divines appointed to consider the question, prevented anything from being done till the reign of Charles II., who, being much and frequently in need of their services, permitted them quietly to settle in the island. In 1723 they acquired the right to possess land; 1753 they obtained the right of naturalization. Since 1830 civic corporations, since 1833 the profession of advocates, and since 1845 the office of alderman and of lord-mayor, have been opened to them. The crowning triumph of the Christian principle of toleration as well as of political wisdom, was achieved 1858 by the admission of J. into parliament. See JEWS, in the Law of the United Kingdom.

Some of the relics of that mighty host of exiles that left Spain and Portugal found their way into France, where they long lingered in a miserable condition. In 1550, they were received into Bayonne and Bordeaux; they were also found in considerable numbers in Avignon, Lorraine, and Alsace. In 1784, the capitation-tax was abolished. In 1790, while the French Revolution was still in its pristine vigor, and animated by a sincere humanitarianism, the J. presented a petition to the national representatives claiming equal rights as citizens. Mirabeau was among their advocates, and their cause could not, therefore, be unsuccessful. From this time their technical designation in France has been *Israelites*. In 1806, Emperor Napoleon summoned a 'Sanhedrim' of J. to meet at Paris, to whom a variety of questions were put, mainly with a view to test their fitness for being French citizens. Their answers were satisfactory, and they were allowed to reorganize their religious institutions in the most elaborate manner. Since then, no material change has taken place in the laws regarding them; and they are since then found not only in the highest offices of civil administration—frequently in the ministry (e.g., Crémieux, Goudchaux, Fould)—but they also fill some of the chief places in the army and navy. We may add here, that their surpassing bravery in the field has been the subject of frequent remark, especially since among the vices with which a brutal prejudice loved to brand them, in spite of all historical evidence, was also that of cowardice.—In Denmark, since 1814, they have been on equality as citizens with native Danes.—In Sweden, they did not obtain admission till 1776, and then only into Stockholm and three other towns. Citizenship is still conferred as a favor.—Norway forbade them to touch its soil till 1860.—Admitted into Russia Proper by Peter the Great, they were expelled—to the number of 35,000—by Empress Elizabeth 1743. Readmitted by Empress Catharine II., they were further protected by Emperor Alexander I., who 1805–09 issued decrees, insuring them full liberty of trade and commerce: Nicholas withdrew these privileges. They are still excluded from Great Russia. In 1881 a violent agitation against the Jews, accompanied by much outrage and bloodshed, arose in s. and w. Russia, and in Warsaw.—In

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Poland they are more numerous than in any other part of the world. They owed their first humane reception in the 14th c. to the love which King Casimir the Great bore for a Jewish mistress. For many years, the whole trade of the country was in their hands. During the 17th and the greater part of the 18th c., however, they were much persecuted, and sank into great ignorance, and even poverty; but education—in spite of the severity and barbarism of Russian intolerance—has, since the French Revolution, made progress among them.—Frederick the Great, King of Prussia, showed himself singularly harsh toward the J.; in fact, his legislation, it has been said, almost throws us back into the middle ages. All manner of iniquitous and ridiculous taxes were laid on them; only a certain number were allowed to reside in the country, and these were prohibited both from the most honorable and the most lucrative employments. This shameful state of matters was ended by the Prussian edict of toleration (1812), by which J. were placed in an almost equal position as citizens with other Prussians. Since then, the tendency, on the whole, had been to enlarge their 'liberties'—until the Revolution of 1848 gained them their full emancipation, though it was slowly carried out.—In the smaller German states, their full rights were grudgingly conceded. The Reichstag of the empire, like the National Assembly 1848, now contains many prominent Jewish members. The year 1880 was marked by a remarkable revival of hostility against the Jews, especially in Prussia, and was encouraged by many persons of standing in society: this hostility still shows much popular force. Its occasion seems to be mostly the superior abilities and success of the Jews in gaining station and wealth; though it claims to be caused by their exorbitant greed.—In Austria, Emperor Joseph II. distinguished himself by passing an act of toleration, 1782, which was extraordinarily liberal in its provisions for the Jews. Not till 1860, however (and even then under certain restrictions), did they acquire the right to possess land.—In Hungary and Transylvania, they have long had important privileges, and have been protected by the nobility. In Roumania they still suffer much ill-usage, though protected by the treaty of Berlin.—Spain began to tolerate them again 1837, and they can follow trade or agriculture like other Spaniards; but few J. have as yet cared to venture back to a land that fills them with the most mournful recollections.—Portugal, where they have no civic rights, has only a few German Jews.—Switzerland long treated them harshly, and only of late have steps in the right direction been taken.

In Turkey they are very numerous, and have thriven in spite of the exactions of pashas, the insolence of Janizaries, and the miseries of war. Their communities in Constantinople, Adrianople, Saloniki, Smyrna, Aleppo, and Damascus, are considerable; in Palestine, their ancient home, they are said to be rapidly increasing, but they are still, in spite of the many efforts on the part of their European brothers to ameliorate their condition, very poor. Their numbers in

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Arabia are not very large, yet they have some independence. Those in Persia have sunk into ignorance through oppression, yet it is touching to find that they are not hopeless. 'Heavy,' they say, 'is our slavery; anxiously we wait for redemption.' They exist in Afghanistan, and carry on a trade between Cabul and China; in India and Cochin China, where they are both agriculturists and artisans; in Surinam, there is a flourishing colony; in Bokhara, where they possess equal rights with the other inhabitants, and are skilled in the manufacture of silks and metals; in Tartary and China, where, however, they are insignificant both in numbers and in position. They are found also all along the n. African coast; where, indeed, they have had communities for perhaps more than a thousand years, which were largely reinforced in consequence of the great Spanish persecutions. They are numerous in Fez and Morocco, though not always free from the perils of Mohammedan fanaticism. In Egypt and Nubia, they are few; in Abyssinia, more numerous; and it is ascertained that they have even made their way into the heart of Africa; they exist in Sudan, and are found further south. They have been in Brazil since 1625, and are settled in parts of the W. Indies.

The first settlement of J. as a distinct people in the United States was made at Newport, R. I., about 1676. 1677, Feb. 28, a deed was recorded there, describing the purchase by them of a tract of land for a separate burial-place. They erected a synagogue there 1762. In 1729 a Jewish settlement was made at New York; 1733 at Savannah; 1765 at Charleston; 1782 at Philadelphia; 1823 at Baltimore; and shortly afterward at New Orleans. No systematic attempt was made by them to ascertain their own strength in the United States till 1878, and the returns published 1880 showed manifest incompleteness, viz.: less than 300 congregations, less than 15,000 congregation members, less than 13,000 children attending schools, and total pop. 270,500. During the next 5 years there was an unusual increase by emigration from Germany, Austria, Russia, and other countries, stimulated by race troubles, or proscriptive, or restrictive laws; and a competent authority gave the following estimates 1886, Jan. 1: congregations 7,500; congregation members 250,000; children at religious and day schools 215,000; total pop. 500,000; value of synagogue buildings \$800,000; and of charitable and benevolent institutions \$5,000,000. Each congregation makes its own rules for its own government, and elects its own rabbi either for a term of years or for life. The rabbi attends exclusively to the religious needs of the congregation, and a board of trustees to the purely business matters. In 1875 a number of congregations joined in establishing the Hebrew Union College in Cincinnati for the education of rabbis and teachers, the first Jewish theol. institution in the United States. This college confers the degrees *Bachelor of Hebrew* and *Rabbi*, and is representative of the liberal branch of J. in the United States. The more conservative branch established a similar institution in New York 1887, Jan. 2, under the name the Jewish Theological Seminary,

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and with the Rev. Sabato Morais, D.D., LL.D. as pres. and prof. of Hebrew and Biblical literature. Both institutions provide an 8-year course of study, and require that all students must have a secular collegiate education prior to graduation in them. The most radical of all recent innovations in orthodox Judaism was the 'platform' adopted at a national Rabbinical convention of 'the Reformed Hebrew Church' in Pittsburg, 1885, Nov. 17-18. Three of the declarations indicate the great divergence of belief: 'We hold that all such Mosaic and Rabbinical laws as regulate diet, priestly purity, and dress, originated in ages and under the influence of ideas altogether foreign to our present mental and spiritual state. They fail to impress the modern Jew with a spirit of priestly holiness; their observance in our days is apt rather to obstruct than to further modern spiritual elevation. We consider ourselves no longer a nation, but a religious community, and therefore expect neither a return to Palestine nor a sacrificial worship under the sons of Aaron, nor the restoration of any of the laws concerning the Jewish state. We recognize in the Mosaic legislation a system of training the Jewish people for its mission during its natural life in Palestine, and to day we accept as binding only the moral laws, and maintain only such ceremonies as elevate and sanctify our lives, but reject all such as are not adapted to the views and habits of modern civilization.' The J. in the United States are noted for their business thrift, interest in public affairs, and great benevolence; and they have established many beautiful, costly, and effective institutions of education and mercy.

The entire number of J. recognizable as such in the world was estimated (1888) by F. D. Mocatta between 8 and 10 millions. There were about 100,000 in the United Kingdom, of whom seven-tenths were in London; 20,000 in the British colonies; 70,000 in France, of whom 40,000 were in Paris; 600,000 in Germany, which received 40,000 with Alsace and Lorraine from France; 650,000 in America, of whom nearly 500,000 were in the United States; 40,000 to 50,000 in Persia; 10,000 to 15,000 in the Khanates, and a like number in India; beside large numbers along the n. coasts of Africa, in Abyssinia, Mexico, almost every state in S. America, Switzerland, Belgium, Holland, Poland, Austria, Russia, and Turkey. The influx of J. into Palestine from other parts of the Turkish dominions, also from Poland, Russia, and Central Europe, which had been in progress from the early part of the present c., has been largely checked in recent years by the Turkish govt., which though making an outward show of absolute toleration, seems to fear the inroad of European ideas. The number of persons in various lands, whose Jewish descent is unrecognizable through admixture with other blood in many successive centuries, will appear as probably very great, when we consider the wide dispersion of the two and a half tribes of recognized J. for almost 2,000 years; together with the fact that 10 tribes of the original 12 have been utterly lost to human knowledge for 2,500 years (see above: also BABYLONIAN CAPTIVITY). This fecund and indestructible race

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of Abraham, Isaac, and Jacob, seems to have entered, ages since, as a pervading element into the mass of the whole humanity.

LANGUAGE AND LITERATURE.—*Language.* Among the Semitic family of languages, the Hebrew (called in the Old Testament, the speech of Canaan; in the later portions of the same book, the speech of Judæa; and first in the Chaldee targums, the Sacred Language, or rather the language of the Sanctuary and things connected with it—as the law [Mishna], the prayers, etc.) is one of the oldest, and in regard to strength, refinement, and elaborate completeness of grammatical structure, one of the most remarkable. For its chief characteristics, see SEMITIC LANGUAGES. Yet it is neither the oldest of Semitic dialects, nor, as was long believed, the first of all human languages. Once identical with the Phœnician, it was adopted by Abraham and his family in Palestine. The peculiar religious and moral notions of the Hebrews could not but impress upon it by degrees a distinct character, and thus Hebrew became a distinct dialect. Although the Sacred writings are the oldest Semitic works which we possess, there is yet, except a few archaisms, hardly any trace of the primitive state of the Hebrew language preserved in them; they belong to periods when it was nearly as fully formed and developed as in the time of the exile. The differences in style, manner, and idiom in the different books, must rather be traced to the individualities of the various writers. In general, we distinguish two distinct periods—the golden age, up to the Babylonian exile, when, except a few Egyptian words, no foreign admixture mars the purity of the language; the second from the exile onward when Persian and Aramaic elements had largely been introduced. As we find it in the Bible, the Hebrew may in some particulars be called a poor language; yet there is a sublime grandeur, and, in the provinces of religion and agriculture, also a richness inherent in it which surpasses almost every ancient and modern language. It is hardly to be presumed, in the absence of distinct traces, that there should have been, within the small compass of Palestine, room for several dialects. The different pronunciation of the *Shin* alluded to in Judges xii. must have been only a solitary peculiarity of the Ephraimites, as, at a later period, the Galileans, and also the inhabitants of Jerusalem, were known for their faulty pronunciation, as shown in several passages of the New Testament and the Talmud. The Hebrew character still universally employed in writing, and called *square*, Assyrian or Babylonian character, first takes the place, at an uncertain period after the exile, of the older national alphabetic character, which was common in the age of Moses, and in any case was similar to the Old Phœnician.

A grammatical treatment of Hebrew began after the language ceased to be spoken by the people. The vocalization and accentuation of the text originated in the 6th and 7th c. after Christ (see MASORA). The J. made a first attempt at a system of grammar about the dawn of the 10th c., after the example of the Arabians, and originally even in

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the Arabian language. Rabbi Saadia Gaon (died 942), Jehuda Chajug (abt. 1050), Abraham-ben-Esra (abt. 1150), and David Kimchi (abt. 1190-1200) are held in classic repute as grammarians. The Hebrew dictionary of the latter was long considered the best that had been executed. The founder of the study of Hebrew among Christians was the famous Johann Reuchlin (died 1522), who, however, like the grammarians of the next age, Buxtorf and others, strictly adhered to the Jewish tradition and method. A new era began when the study of the other members of the Semitic family of languages, the Syriac, the Arabic, and the Ethiopic, enlarged the Hebraist's field of view; the heralds of this era were the German scholars, Alb. Schultens (died 1750) and Nik. W. Schröder (died 1798), who sought to remedy the one-sided defective method into which the so-called Dutch school fell by its too exclusive regard for Arabic. Gesenius, especially, with a comprehensive and due consideration of all the allied languages, devoted his attention to the critical observation and exposition of the individual grammatical facts, and a more just and harmonious explanation of them. Since then Ewald (q.v.), who treats the Hebrew language as an organism after the historico-genetic method, has carried the study still further, and in some measure superseded Gesenius. Ewald's *Grammatik der Hebr. Sprache* (Leip. 1844); Gesenius, *Hebräische Grammatik* (1813; 21st ed. by Rödiger (1872); Olshausen's *Lehrbuch* (1861); and the elementary ones founded on its method by Bickell (1879), and Land (Amsterdam 1869); are the best known grammars. The most comprehensive Hebrew dictionary is that by Gesenius, *Thesaurus Linguae Hebraicæ* (1829; completed by Rödiger 1858); the best of the smaller lexicons are Gesenius's *Hebr. und Chald. Handwörterbuch* (1812; 8th ed. 1878), and *Latin Manuale*; and Fürst's (1863; 3d ed. 1876).

Literature.—The extraordinary influence which the religion of the Hebrews has exercised on Christian and Mohammedan nations and is now exercising through them over all the world, has given a universal significance to their ancient literature. In antiquity and credibility, in the religiousness of its form and the vigor of its poetry, it surpasses the literature of any other pre-Christian people, and thus constitutes both the most remarkable monument and the most authentic source of the early history and spiritual development of the human race. It is true, however, that only a comparatively scanty portion of it has come down to the present day, and even the contents of what is extant have by no means remained unaltered in the lapse of ages. It is quite certain that the Hebrews, in their very earliest times, only engraved or cut out on stone, metal, or wood what is said to have been executed in *writing*; and some have even conjectured—with little reason—that there was no material adapted for the record of lengthened compositions before the period of David. There is also the conjecture—appealing for its basis to a keen and learned but perhaps too enthusiastic linguistic and historic criticism—that some writings of the Hebrews, held to be of ancient date, are of later

origin than is assigned to them by their contents, their mode of representation, and the character of the language; so that we have nothing which, *in its original shape*, reaches further back than the time of King David. The criticism that confidently proclaims its discovery of traces of much later hands than those to whom tradition ascribes the authorship of some particular works, does not consider itself as necessarily discrediting the incidents narrated, nor as destroying the value of that peculiar spirit by which they are characterized. The question, however, arises as to how far the peculiar spirit and value of an antique depend on the veritableness of its antiquity.

The composition of those extant works in *Hebrew Literature* which, among Protestants are known commonly as 'canonical,' has by the vast majority of scholars, been believed to extend over more than 1,000 years—viz., from the time of Moses to within a century of the time of Alexander the Great. Some of these canonical books date from the time of the exile, and later; and an attempt has been made—certainly ingenious—to make the exile the period of transition from *Hebrew* literature to what the theory designates as *Jewish* literature. Probably all that can be proved from the data now accessible to critics, is that with the exile there came a broadening of the national literary scope; and after it a great increase in the number of writings, with a new diversity in the objects and the nature of the works produced. The nature and contents of the particular writings are determined by the changing fortunes of the people, who were at first strong and flourishing; then disrupted and weakened; then held in subjection by Assyrian, Egyptian, Babylonian, Persian, Greek, and Syrian rulers; and finally, once more independent under native princes. Nevertheless, the prevalent idea—the basis, so to speak, of the whole Hebrew literature, so far as it appears in the 'canonical' books above referred to, is the calling of the nation to be in covenant with God as His chosen people, that through them He might bring in everlasting righteousness and work out salvation for the race of man. Looked at from the merely human point, it is a passionate enthusiasm for independence, and for the preservation of a nationality founded on their divinely given law and their divinely ordered history; hence its patriotism is of a profoundly religious type. The law and the doctrine are the 'word of God;' the Hebrews are the 'people of God,' his 'chosen people;' their fortunes are, in quite a special sense, 'providences;' and their poetry has God or the nation for its constant theme. In a certain sense, therefore, as we might expect, all the productions of the ancient Hebrew muse show marked similarity to each other; still they can be arranged, according to form and contents, under the five heads—law, prophecy, history, lyric poetry, and speculation. (For a special account of these, see the respective titles of the books of the Old Testament: also BIBLE: PENTATEUCH; ETC. The post-exilian literature, founded on the earlier and more creative Hebrew, and for the most part written in the same language, yet gives signs of being qualified, at first in minor points,

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by religious conceptions borrowed from the Persians, by Greek wisdom, Roman law, and, at a later period, by Arabic poetry and philosophy, and European science; though everything, at least in the earlier period, is strictly subordinated to the great ideas of the ancient faith. Since the return from exile, the Hebrew or Jewish—erroneously, called also the *Rabbinical*—literature has, without the slightest external encouragement, actively taken part in the cultivation of the human mind; and in the results of this activity, which are still far from being duly appreciated, there lie concealed the richest treasures of centuries.—Hebrew and Jewish literature since the return from exile, B.C. 536, has been divided chronologically into nine periods.

The *first* period extends from B.C. 536 to 143. After the return from exile, the Jewish people naturally enough became animated by intense national feeling: they had nearly lost name, country, life; and now that these were restored again, they strenuously resolved never more to place them in jeopardy. Guided by Ezra, the intellect of the nation began to exhibit surpassing reverence for the Pentateuch and the Prophets. Expositions and additions to the earlier history (*Midrashim*), as well as Greek translations, were executed, and several of the Hagiographa—such as particular psalms, Ecclesiastes, the Books of Chronicles, portions of Ezra and Nehemiah—were written. To this period also, if to any, must belong the uncertain performances of the *Great Synagogue* (q.v.), a body the existence of which has, as indicated above, been doubted by some early critics, but which is now established beyond doubt. To this the work of completing the canon of the Old Testament is chiefly ascribed. Toward the close of this period (B.C. 190–170), several writers appear *in propria persona*, as, for instance, Sirach and Aristobulus. The doctors of whom the Great Synagogue chiefly consisted were called *Soferim* (Scribes), and the Aramaic finally became the popular dialect of Palestine.

The *second* period extends from B.C. 143 to A.D. 135. The *Midrash* (q.v.), or the inquiry into the meaning of the sacred writings, was divided into *Halacha* (q.v.) and *Hagada*; the former considered the improvement of the law, with a view to practical results; the latter, the essence of the religious and historical interpretations. At first, both were the oral deliverances of the Soferim, but gradually written memorials made their appearance. The public interpretation of the Scripture in schools and synagogues, the independence of the sanhedrim, the strife of sects, and the influences of Alexandrian culture, furthered this development. To this period also belong various Greek, but not, as is still erroneously supposed by some, the *written* Targums or Aramaic Versions of the Bible (see TARGUMS), which sprang at a much later period from oral translations of the Pentateuch in the synagogues instituted after the return from the exile; further the whole of the Apocrypha (q.v.), and the earliest Christian writings, which are at least the productions of men nurtured in the principles of Judaism, and which contain many traces of Judaistic cul-

ture, feeling, and faith. It was characterized also by the drawing up of prayers, scriptural expositions, songs, and collections of proverbs. The poet (not the prophet) Ezekiel, the author of the first book of the Maccabees, Jason, Josephus, Philo, Johannes (see above), are names specially worthy of mention; so also are the doctors of the oral law—Hillel (q.v.), Shamai, Jochanan-ben-Saccai, Gamaliel, Eleazar-ben-Hyrcan, Joshua-ben-Chananja, Ishmael, Akiba, and others of like eminence. *Rabbi* (Master), *Talmid Chacham* (Disciple of Wisdom), were titles of honor given to those expert in a knowledge of the law. Besides the Maccabean coins, Greek and Latin inscriptions belonging to this period are extant.

The *third* period reaches from A.D. 135 to 475. Instruction in the Halacha and Hagada now became the principal employment of the flourishing schools in Galilee, Syria, Rome, and since 219 in Babylonia; the most distinguished men were the masters of the *Mishna* (q.v.) and the *Talmud* (q.v.)—viz., Eleazar-ben-Jacob, Jehuda, Jose, Meir, Simeon-ben-Jochai, Jehuda the Holy, Nathan, Chija, Rab, Samuel, Jochanan, Hunna, Rabba, Rava, Papa, Ashe, and Abina. Besides expositions, additions to Sirach, ethical treatises, stories, fables, and history also were composed; the prayers were enriched, the Targum to the Pentateuch and the Prophets completed, and the calendar fixed by Hillel the second, 340. After the suppression of the academies in Palestine, those of Persia—viz., at Sura, Pumbeditha, and Nehardea—became the centre of Jewish literary activity. On Sabbaths and festal days, the people heard, in the schools and places of prayer, instructive and edifying discourses. Of the biblical literature of the Greek J., we have only fragments, such as those of the versions of Aquila and Symmachus. With this period terminates the age of direct tradition.

The *fourth* period extends from A.D. 475 to 740. By this time the J. had long abandoned the use of Hebrew, and instead had adopted the language of whatever country they happened to dwell in. During the 6th c. the Babylonian Talmud was concluded, the Palestinian Talmud having been redacted about a hundred years before. Little remains of the labors of the Jewish physicians of the 7th c., or of the first *Geonim* or presidents of the Babylonian schools, who first appear 589. On the other hand, from the 6th to the 8th c. the Masora was developed in Palestine (at Tiberias); and, besides a collection of the earlier Haggadas (e.g., *Bereshith rabba*), independent commentaries likewise were executed, as the *Pesikta* the *Pirke of Eliezer* (700), etc. See MIDRASH: HAGGADA.

In the *fifth* period, A.D. 740–1040, the Arabs, energetic, brilliant, and victorious in literature as in war, had appropriated to themselves the learning of Hindus, Persians, and Greeks, and thus excited the emulation of the oriental J., among whom now sprang up physicians, astronomers, grammarians, commentators, and chroniclers. Religious and historical Haggadas, books of morality, and expositions of the Talmud, likewise were composed. The oldest

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Talmudic compends belong to the age of Anan (abt. 750), the earliest writer of the Karaite Jews. The oldest prayer-book was drawn up about 880; and the first Talmudic Dictionary about 900. The most illustrious *Geonim* of a later time were Saadia (died 941), equally famous as commentator and translator of Scripture into Arabic, doctor of law, grammarian, theologian, and poet; Scherira (died 998), and his son Hai (died 1038), author, among other works, of a Dictionary. From Palestine came the completion of the Masora and of the vowel-system; numerous *Midrashim*, the Hagiographical Targums, and the first writings on theological cosmogony, also were executed there. From the 9th to the 11th c., Kairwan and Fez, in Africa, produced several celebrated Jewish doctors and authors. Learned rabbins likewise are found in Italy after the 8th c.—e.g., Julius in Pavia, etc. Bari and Otranto were at this time the great seats of Jewish learning in Italy. After the suppression of the Babylonian academies (1040), Spain became the central seat of Jewish literature. To this period belong the oldest Hebrew codices, which go back to the 9th c. Hebrew rhyme is a product of the 8th, and modern Hebrew prosody of the 10th century.

The *sixth* period A.D. 1040–1204, is the splendid era of Jewish mediæval literature. The Spanish J. busied themselves about theology, exegetics, grammar, poetry, the science of law, astronomy, mathematics, philosophy, rhetoric, and medicine. They wrote sermons, and ethical and historical works. The languages employed were Arabic, Rabbinical Hebrew, and ancient or classical Hebrew. We can mention here only the great doctor, Samuel Halevi (died 1055), etc.; and lastly, the renowned *Maimonides* (q.v.), whose death closes this epoch. The literature of the French rabbins was more national in its character, and kept more strictly within the limits of the Halacha and Haggada. In Provence, which combined the literary characteristics of France and Spain, there were celebrated Jewish academies at Lunel, Narbonne, and Nîmes, and we find Talmudists, such as Berahja Halevi, Abraham-ben-David, etc. The fame of the Talmudists of Germany, especially those of Mayence and Ratisbon, was very great. Among the most illustrious Jewish writers of this period, belonging to that country, are Simeon, the compiler of *Yalkut*, Joseph Kara, Petachja, etc. Only a few names belong to Greece and Asia; still the Karaite J. had a very able writer in Juda Hadassi (1148). The greatest part of the Feast Day prayers was completed before Maimonides. Many of the works, however, produced between 740 and the close of this period are lost.

The *seventh* period, A.D. 1204–1492, bears manifest traces of the influence exercised by Maimonides. Literary activity showed itself partly in the sphere of theologico-exegetic philosophy, partly in the elaboration of the national law. With the growth of a religious mysticism, there also sprang up a war of opinions between Talmudists, Philosophers, and Cabalists. The most celebrated J. of this period lived in Spain; later, in Portugal, Provence, and Italy. To

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Spain belongs (13th c.) the poet Jehuda Charisi, etc. In the 15th c., a decline is noticeable. Books written in Hebrew were first printed in Spain, at Ixar in Aragon (1485), at Zamora (1487), and at Lisbon (1489).—During this epoch, the chief ornaments of Jewish literature in Provence were Moses-ben-Abraham, David Kimchi, Jeruham, Farissol, Isaac Nathan, the author of the Hebrew Concordance.—In Italy, Jewish scholars employed themselves with the translation of Arabic and Latin works. Works of an æsthetic character were written by Immanuel-ben-Solomon, author of the first Hebrew sonnets; Moses de Rieti, who wrote a Hebrew *Divina Commedia*, etc.—While France could show only a few notable authors, such as the collectors of the Tosafot, Moses de Coucy, and Jehiel-ben-Joseph, the poet and exegete Berachja, Germany produced a multitude of writers on the law, such as Eleazar Halevi, Meyer from Rothenburg, Asher, Isserlin, Lippmann. The most of the extant Hebrew mss. belong to this period; but a great part of mediæval Jewish literature lies unprinted in Rome, Florence, Parma, Turin, Paris, Oxford, Leyden, Vienna, and Munich.

The *eighth* period, A.D. 1492–1755, is not marked by much creative or spiritual force among the Jews. In Italy and the East (1492), in Germany and Poland (1550), in Holland (1620), Jewish scholars worked printing-presses, while numerous authors wrote in Hebrew, Latin, Spanish, Portuguese, Italian, and Judæo-German. Some of the most eminent theologians, philosophers, jurists, historians, mathematicians, poets, commentators, lexicographers, grammarians, etc., of this period were Isaac Abravanel, Elia Mizrachi, I. Arama, J. Chabib, Elia Levita, Obadio Seferno, Joseph Cohen, Gedalja Jahia, Sal. Usque, Asaria de Rossi, David de Pomi, David Gans, Isaac Troki, I. Luria, J. Karo, M. Alshech, M. Jafe, J. Heller, J. Aboab, Manasse b. Israel, Dav. Conforte, Leo de Modena, B. Musaphia, J. Eybeschütz, D. Oppenheimer, J. Emden, M. C. Luzzatto, etc.

The *ninth* period extends from A.D. 1755 to the present time. Encouraged by the spirit of the 18th c., Moses Mendelssohn (q.v.) opened to his co-religionists a new era, which, as in the middle ages, manifested itself first in the national literature. Its character, contents, expression, and even its phraseology, were changed. Poetry, language, philology, criticism, education, history, and literature have been earnestly cultivated. The sacred books have been translated by them into the languages of modern Europe, and foreign works into Hebrew; and many of this once proscribed and detested race have taken an important part in the public and scientific life of Europe. Among the many illustrious names of this last period are Ezechiel Landau, Elia Wilna, J. Berlin, Mendelssohn, Maimon, Bendavid, Mendez, Beer, Euchel, Bensev, S. Dubno, Creizenach, Zunz, Jost, Geiger, Rappoport, Dukes, Zedner, Fürst, Sachs, Steinschneider, Munk, Salvador, Reggio, etc.—chiefly cultivators of literature, with reference to their own creed and nationality.

JEWS.

To enumerate names of those who were and are illustrious in general literature, in law, philosophy, medicine, philology, mathematics, belles-lettres, etc., we cannot even attempt, since there is not one country in Europe which does not count J. among the foremost and most brilliant representatives of its intellectual progress. Of Germany—considered to be in the vanguard of European learning—Bunsen says that the greater part of the professors at its universities and academies are Jews or of Jewish origin (Neander, Gans, Benary, Weil, Benfey, Stahl, Dernberg, Valentin, Lazarus, Herz, etc.)—certainly a startling fact. Another extraordinary and well-authenticated fact is, that the European press, no less than European finance, which means the freest development of all the resources of soil and science for the gigantic enterprises of our day, are to a great extent in Jewish hands or under their power; while names like Heinrich Heine, B. Börne, R. v. Ense, Berthold Auerbach, Henrik Herz, Jules Janin; Felix Mendelssohn-Bartholdy, Halévy, Meyerbeer, Moscheles, Joachim, Ernst, Rubinstein, Wieniawski, Grisi, Braham, Giuglini, Czillag, Costa; Rachel, Davison, Rott, Dessoir, Bendemann, etc.; besides hosts of others less familiar to English ears, who shine in all branches of art, music, sculpture, painting, the drama, etc., show plainly how unjust is the reproach of their being an ‘abstract’ people, without sense for the bright side of life and the arts that embellish it. Briefly—they are, by the unanimous verdict of the historians and philosophers of our times, reckoned among the chief promoters of the development of humanity and civilization. What has been their reward we have seen. Terrible has been the punishment for sins, real and imaginary, over which both Christians and Mohammedans have thought good, at different periods, to constitute themselves judges; and the most hideous spot in the history of the last 2,000 years is the systematical but futile endeavor to sweep the ‘chosen race’ from the face of the earth. ‘If there is a gradation in sufferings, Israel has reached the highest acme; if the long duration of sufferings, and the patience with which they are borne, ennoble, the Jews defy the high-born of all countries; if a literature is called rich which contains a few classical dramas, what place deserves a tragedy lasting a millennium and a half, composed and enacted by the heroes themselves?’ It is melancholy to note that of late there has been a revival in Germany of race-hatred—or, at least, bitter jealousy—against the Jews, fomented by men of standing; and an anti-Semitic league was formed 1880.

JEWS, in the Law of the United Kingdom of Great Britain and Ireland: now, if natural-born subjects, on nearly the same footing as British subjects. The following peculiarities only are noticeable. By the 8 and 9 Vict. c. 52, they were allowed to hold offices in municipal corporations, on condition of signing a declaration (in place of the usual oaths) not to exercise their influence so as to injure or weaken the Protestant Church. By the act 34 and 35 Vict. c. 48, they are placed, as regards their schools and places of worship, of education and charities, on the same footing

JEW'S EAR—JEWS' MALLOW.

as Protestant dissenters. Their marriages according to their own usages are valid, provided both the parties married had been persons professing the Jewish religion. As regards municipal offices, and all other offices where the same declaration is required (see **ABJURATION**, **OATH OF**), a Jewish subject is entitled to be admitted with a declaration or without any oath. The law now enables either house of parliament, when a Jew would be entitled, but for the oath of allegiance, to sit and vote in the house, to modify that oath by omitting the words, 'and I make this declaration upon the true faith of a Christian.' It is, however, still in the discretion of either house to refuse to make the resolution to omit those words, so that J. have not an absolute right to admission, though practically the admission is not likely to be refused, at least by the house of commons. The law especially excludes J. from holding or exercising the office of guardians and justices of the United Kingdom, or of regent of the United Kingdom, or of lord high chancellor, lord keeper or lord commissioner of the great seal of Great Britain or Ireland, or the office of lord lieutenant or deputy, or other chief governor or governors of Ireland, or her majesty's high commissioner to the general assembly of the Church of Scotland. Whenever a Jew holds any office in the gift of her majesty, to which office belongs any right of presentation to any ecclesiastical benefice, such right of presentation devolves on the Abp. of Canterbury for the time being.

JEW'S EAR (*Exidium auricula Judæ*): fungus, one of the *Hymenomycetes*, which grows on decaying parts of living trees, particularly elders. In size and form it bears some resemblance to a human ear. It is soft but cartilaginous, wrinkled, and generally brown. It is stemless. The spores are produced on the upper surface. The under surface is fibrous and downy. J. E. was formerly in repute as a topical discutient and astringent. It may be kept long in a dried state. The genuine J. E., after being dried, swells when immersed in water; the *Polyporus versicolor* (often substituted for it) does not.

JEWS-HARP [*F. jen*, a toy?]: very simple musical instrument, of metal. When played on, it is held between the teeth, and the sound is produced by the inhaling and ejecting of the air from the lungs, while at the same time an elastic tongue or spring, which is fixed in the middle of the frame, is set into vibration by being twitched by the finger. It is an old invention, mentioned by Prætorius in *Organographia*, 1619, under the name of *Crembalum*. The best Jews-harps are made in Riva, a town in the Italian Tyrol. The first performer of any celebrity on the Jews-harp was a Prussian soldier, under Frederick the Great, called Koch. In modern times, Kunert, Amstein, and others, were famous for using a variety of harps, all differently tuned; and their performances were so wonderful, that, like other artists, they travelled over Europe, and appeared at public concerts with great success.

JEWS' MALLOW: see **CORCHORUS**.

JEWS' THORN—JEZREEL.

JEWS' THORN: see JUJUBE: *PALIURUS*.

JEYPORE, *jī-pōr'*, or JEYPOOR, or JAIPUR, *jī-pōr'*: state in Rajputana, w. Hindustan; lat. $25^{\circ} 41'$ — $28^{\circ} 27'$ n., long. $74^{\circ} 55'$ — $77^{\circ} 15'$ e.: bounded n. by Bikaner, Loharu, Jhajjar, and Patiala, e. by Alwar, Bharatpur, and Karauli, s. by Gwalior, Bundi, Tonk, and Udaipur, w. by Kishangarh, Jodhpur, and Bikaner; 14,465 sq. m.; cap. city of same name. The soil is generally sandy; the hills are covered with jungle-grass valuable only for fuel; the hill ranges contain granite, sandstone, black marble, mica, cobalt, and copper ore; and an annual average of 40,000 tons of salt is taken from Sambhar Lake. The best soil yields corn cotton, wheat, barley, sugar-cane, tobacco, opium, linseed, and several purely Indian products; but only with the aid of extensive irrigation works, for which the state has paid \$25,000 annually since 1868. J. is under the political superintendence of the Rajputana agency and the govt. of India. There are 38 forts with 220 guns of all calibres, and a military force of 824 artillerymen, 4,450 cavalry, and 15,858 infantry in the state. The chief manufactures are marble sculpture, enamel work on gold, woolen goods and fabrics. Pop. of state (1891) 2,824,480.

JEYPORE, or JEYPOOR, or JAIPUR: capital of the protected state of J., perhaps the handsomest and most regularly built of the native towns of India, stands about 850 miles northwest of Calcutta. It is subdivided by parallel streets in both directions into small rectangular blocks. There are numerous temples and mosques, an arsenal, an observatory, and an English and Oriental school, with a medical sch. Pop. of J. (1891) 158,890; (1901) 159,030.

JEZEBEL, n. *jěz'ě-běl* [Heb. *Isebel*]: an impudent, daring, and vicious woman, so named after *Jezebel*, the wife of Ahab, King of Israel; a bold, bad woman; a vixen or termagant.

JEZIRAH, *jě-zī'rah*, or BOOK OF CREATION: one of two noted cabalistic works of the Jews, divided into six chapters and numerous sections, claimed by the Jews to have been of divine origin, and regarded by modern scholars as having been composed in Egypt in the time of Philo Judæus by learned rabbis. It is based on the cabala, or science of interpreting the letters, words, numbers, and accents in the Hebrew law, each one of which is believed by cabalists to contain a mysterious meaning, and to form a method of foretelling future events. The J. professes to furnish an account of the creation of the world, and was printed with commentaries 1562, Latin translation 1642, and German translation 1830.

JEZREEL, *jěz'rě-ěl*: town of n. Palestine on a plain of the same name, between Gilboa and Little Hermon, cap. of the Israelite monarchy under Ahab; now the small village of Zerin. The site of Naboth's vineyard is supposed to be identical with some rock-cut wine presses e. of the village; and the fountain (I K. xxi. 1) is the spring of Ain el Meiyiteh, a shallow pool full of fish, lying between black basalt boulders on the n., or the larger spring Ain Jalud in

JHANSI—JIB.

the valley n. of the hill. When Ahab chose J. for his residence he built his palace on the e. side of the city, making it a part of the surrounding wall, the entrance to the city and to the palace being through a single gate. Jezebel maintained near by the temple and grove of Astarte with 400 priests (I K. xxiii. 19).

JHANSI, *jân'sē*: fortified town in Gwalior state, Central India. During the revolt of 1857, the native garrison murdered all the Europeans, men, women, and children, not leaving one to tell the tale. In the following April, the place was recovered, with enormous loss on the part of the insurgents, by a detachment of the Bombay army under Sir Hugh Rose. The town till then in the British N.W. Provinces was 1861 made over to Gwalior. Pop. (1881) 26,772.—The *district* of J. is still in the N.W. Provinces, and begins just outside J. town; area 1,567 sq. m.; pop. 333,227.—The *division* of J. has 4,983 sq. m.; pop. 1,000,457.

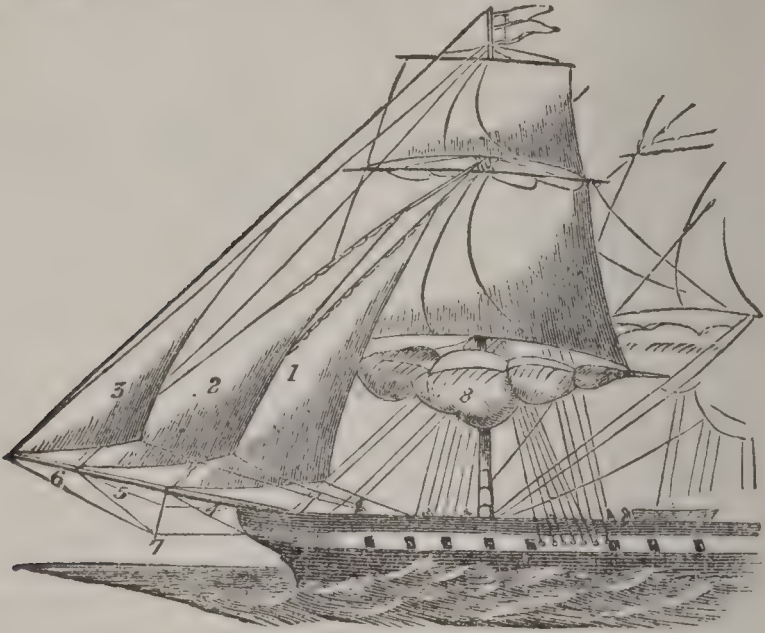
JHELUM, *jē'lūm*, or **JHYLUM**, *jī'lūm*, or **JELUM**, *jē'lūm*, or **BEHUT**, *bē-hūt'* (ancient *Hydaspes*): one of the rivers of the Punjab. It rises in Cashmere, which forms its upper basin, and is navigable within that country about 70 m. On emerging from the Himalaya through the Baranula Pass, it again becomes navigable for small craft. After a course of 490 m., it joins the Chenab, lat. 31° 10' n., long. 72° 9' e., and forms what is sometimes called the Trimah or Trimab. The banks of this river were the scene of the battle between Alexander the Great and Porus. The river waters the towns of Islamabad, Shahabad, Srinagur, Jelalpur, and Pind Dadun Khan.

JHULA, n. *jō'lā*: an Indian bridge across a chasm or ravine, constructed of ropes composed of twigs twisted together.

JIB, n. *jīb* [Dut. *gijpen*, to turn suddenly—said of sails: prov. Dan. *gippa*, to jerk or tip up as by a sudden movement: OF. *regiber*, to kick or wince]: foremost sail of a ship, which shifts of itself from side to side as required by the wind (see below): the projecting beam of a crane: V. to move restively sideways or backwards, as a horse. **JIB'-BING**, imp.: **ADJ.** moving restively, as a horse. **JIBBED**, pp. *jibd*. **JIB'BER**, n. a horse which moves restively sideways or backwards. **JIBE**, or **GYBE**, or **GIBE**, v. *jīb*, among *seamen*, to shift a boom-sail from one tack to the other; to veer a vessel; to turn a vessel round with her stern to the wind when she cannot be stayed. **JI'BING**, imp.: N. in *sailing*, act of going about when the wind is astern or abaft the beam, in order to bring the wind to bear on the reverse side of the vessel to that on which it was previously. **JIBED**, pp. *jibd*. **JIB-BOOM**, *-bóm*, extension of the bowsprit of a ship toward the front, running out beyond it, by a cap and irons, as does the topmast above the lowermast. It gives greater spread for jib-sails, and a more extended base for the top-gallant-mast-stay. In large vessels, a flying jib-boom is run out in a similar manner beyond the jib-boom. **JIB-DOOR**, a door which stands flush with the wall without dressings or moldings.

JIB—JIFFY

JIB: triangular sail borne in front of the foremast in vessels. It has the bowsprit for a base in schooners and vessels of a smaller class, and the jib-boom in larger vessels, and exerts an important effect, when the wind is a-beam,



Jib:

1, fore-topmast staysail, set on fore-topmast stay; 2, jib; 3, flying jib; 4, bowsprit; 5, jib-boom; 6, flying jib-boom; 7, martingale, or dolphin-striker; 8, fore-course.

in throwing the ship's head to leeward. The flying jib has the flying jib-boom for a base. When a fore-course is not used, an additional jib-shaped sail, called the foresail, is spread on the fore-stay.

JIBB, v. *jīb*: to move restively sideways or backwards, as a horse : also spelled **JIB** and **JIBE**.

JIBE, v. *jīb*: expression of scorn: incorrect spelling of **GIBE**, which see.

JIDDAH, *jīd'dā*, or **JUDDAH**: trading town of the Hedjaz, Arabia, on an eminence rising from the e. shore of the Red Sea, about 60 m. w. of Mecca, of which city it is the port. J. is an unhealthful town; it suffers greatly from want of water, and is surrounded by a desert. It has, however, long been the great commercial centre of Arabia. It imports corn, rice, butter, and other natural products from Egypt and Abyssinia, manufactures from India, and slaves from the Malay archipelago. Coffee is largely exported. It is inhabited by a fanatical population, and its religious enthusiasm is never allowed to wane, owing to the numbers of pilgrims to Mecca constantly pouring through it. The average annual landing of pilgrims at the port numbers nearly 40,000. 1858 June 15, the inhabitants rose against the Christians resident among them, and massacred many. In Aug. of the same year, the town was bombarded by the British, and satisfaction rendered. Pop., variable between 10,000 and 20,000 and upward.

JIFFY, n. *jīf'fī* [OE. *jiffle*, to be restless: W. *ysgipio*, to snatch (see **JIB**)]: an instant: a moment.

JIG—JIMMY.

JIG, or **GIGG**, n. *jīg* (q.v.) [F. *gigue*, a jig, in OF. a stringed instrument; *giguer*, to throw the legs about: It. *giga*, a jig, an air for dancing in triple time: Ger. *geige*, a violin]: a quick, lively, or jolting dance; the music or air played for it: V. to dance in a lively, easy, jolting way; to dance; to sort or separate by shaking, as ore. **JIG'GING**, imp.: N. the process of sorting ore by passing it through a wire-bottomed sieve. **JIGGED**, pp. *jīgd*. **JIGGISH**, a. *jīg'gish*, suitable for a jig; having a light, lively manner and temper.

JIGGER, n. *jīg'gēr* [from *jig*, which see]: contrivance for hoisting in a cable on board a ship or for steadying it; consisting of a strong rope with a block at one end, and a sheave at the other, used in maintaining the tension of—or, technically, in 'holding on' to—the cable as it is thrown off from the capstan or windlass, round which it takes only two or three turns. A potter's wheel by which earthenware vessels are shaped by a rapid motion: a miner who cleans ore in a wire sieve: a cooper's tool: troublesome insect of tropical climates, being another name for *chigoe*, of which it is a corruption: see **CHIGOE**.

JIG-JOG, n. *jīg'jōg* [*jig*, and *jog*]: a slow easy pace; a jolting motion.

JIGOT, *jīg'ōt*: see **GIGOT**.

JIHAD, or **JEHAD**, n. *jī-hād'*: a holy war proclaimed by the Mussulmans against Christians.

JIHUN': see **OXUS**.

JIKADAZE, *jī-kād'a-sā*, or **SHIKATZE**, *shī-kāt'sā*: town of Tibet, cap. of the dist Zang, on the right bank of the Zangbo, 190 m. w. of Lassa. Pop. estimated 100,000.

JILL, n. *jīl*: the old familiar name for a woman; a flighty wanton woman.

JILO'LO: see **GILOLO**,

JILT, n. *jīlt* [Scot. *gillet*, or *jillet*, a giddy girl: a dimin. from the familiar personal name *Jill*, as in *Jack* and *Jill*, or *Gill*—said to be a shortened form of *Juliana*: comp. Gael. *diùlt* = *jōlt*, to refuse, to reject]: a young woman who lightly trifles with her lover; a name of contempt for a young woman: V. to give hopes to a lover and then reject him; to practice deception in love. **JILT'ING**, imp. **JILT'ED**, pp.

JIMENA, or **XIMENA**, *chē-mā'nā*: town of Spain, province of Cadiz, 50 m. e. of the town of Cadiz, on the e. declivity of the Sierra de Gazules. The town is regularly built, the streets steep, but clean. There are several churches and schools, a prison, town-house, etc. There are manufactures of leather, linen, earthenware, etc., and a trade in fruit and wine. Pop. 8,878.

JIME'NES DE CISNE'ROS: see **XIMENES**.

JIMMERS, n. plu. *jīm'mērz* [F. *jumeau*, twin—from L. *gemellus*, twin; *gemelli*, twins]: jointed hinges.

JIMMY, or **JEMMY**, n. *jīm'mī* [slang]: a short bar used by burglars in breaking open doors.

JIMP—JITOMIR

JIMP, ad. *jǐmp*, or **JIMPLY**, ad. *jǐmp'ǐ* [O.Sw. *skamt*, short]: scarcely; hardly; barely.

JIMP, a., or **GIMP**, a. *jǐmp* [W. *gwymp*, neat, smart. trim]: elegant of shape; handsome; neat.

JI'NA: see **JAINAS**.

JINGAL, or **JINGALL**, n. *jǐn-gawl'* [Hind. *jangal*]: in the *E. Indies*, or *China*, a light gun or cannon which can be carried by two men; a matchlock of large size.

JINGLE, n. *jǐng'gl* [imitative of the sound]: a rattling or clinking sound; correspondence of words in sound; in speech or writing, high-sounding words without much sense: **V.** to shake or ring; to send forth a clinking or rattling sound, as small metallic bodies when shaken together. **JIN'GLING**, imp. **JINGLED**, pp. *jǐng'gld*: sometimes spelled **GINGLE**, *jǐng'gl*.

JINGO, n. *jǐng'gō* [etym. doubtful]: a word used as a mild oath; one of the party in Britain which advocated the cause of the Turks in the Turco-Russian war, 1877–8; one who advocates a spirited foreign policy; clamorous: **ADJ.** relating or pertaining to the Jingo, as a *jingo* policy. **JINGOISM**, n. *-izm*, views and procedure of the Jingo.

JINK, v. *jǐnk* [Goth. *swinka*, to seek to flee secretly: Ger. *schwinken*, to move swiftly]: in *Scot.*, to elude or escape from a person attempting to lay hold on one; to trick; to move nimbly; to dance: **N.** act of eluding another. **JINK'ING**, imp. **JINKED**, pp. *jǐnkt*. **HIGH-JINKS**, uproarious sport and merriment: see **HIGH-JINKS**.

JINN, n. plu. *jǐn*: in the *Arabian myth.*, a race of fairies, the offspring of fire. **JINNEE**, n. *jǐn'nē*, one of a race of fairies. A king of the Jinn was supposed to have built the pyramids. There were good and beautiful, and evil and hideous Jinn; and the power was attributed to them of becoming invisible, or of appearing under various animal forms.

JIN-RIKI-SHA, *jǐn-rǐk'ǐ-shá*: light two-wheeled carriage used by the Japanese since the political revolution 1868; resembling somewhat the *volante* of Cuba and Mexico, excepting that instead of being drawn by one horse it is drawn by one man. It is similar also to the French *brouette* of the early part of the 17th c. It is provided with drop-top and a centre-pole to which a cross-bar is attached. The J. man, with little clothing to impede his movements, raises the pole to the height of his breast, presses forward against one end of the cross-bar, and dashes off with J. and occupant at a rate—if he is trained to the service—of, it is said, sometimes 8 m. an hour. The J. is now seen everywhere in the large cities, and is a popular mode of local sight-seeing travel.

JIONPOOR'; see **JOUNPUR**.

JIRKINET, n. *jérk'ǐ-nět* [diminutive of *jerkin*]: a sort of bodice or substitute for stays, without whalebones, worn by women.

JITOMIR, *zhǐt-ō-mēr'*: chief town of the govt. of Volhynia, European Russia: on the river Teterev, affluent of

JO—JOACHIMSTHAL.

the Dnieper, lat. 50° 15' n., long. 28° 40' e. Its foundation is traced to the 10th c., and it was at one time an important stronghold against invasions of the Cossacks. In 1648, it was nearly destroyed by the Cossack chief Khmelnitzky. In 1778, it was annexed to the Russian empire. The town has trade in leather, wax, honey, and tallow; has two annual fairs, iron and glass works, and extensive cloth manufactures. Pop. (1880) 41,790: (1888) 56,782.

JO, n, *jō*, JOES, n. plu. [F. *joie*, joy]: in *Scot.*, a lover; love; loved one.

JOACHIM, *yō'ā-čĥīm*, JOSEPH, MUS. DOC.: Hungarian violinist: b. 1831 near Presburg. He received his early instruction at Pesth under Szervawinsky, director of the orchestra at the theatre there, and made his *début* in public at the age of seven. He afterward became the pupil of Böhm at Vienna, and at Leipzig studied counterpoint under Hauptmann, and made the friendship of Mendelssohn. His first appearance in London was 1844, when, though only in his 14th year, he was at once ranked among the most distinguished contemporary violinists. His performances at Vienna, Pesth, Paris, and London have since established him as the first violinist of the day. In power and brilliancy of execution, and all the mechanical qualities of playing, he is little if at all behind Paganini. His works, which include overtures, Hebrew melodies and other songs, and compositions for the violin, are pervaded by the same tenderness and depth of musical feeling that characterize his playing. In 1869, J. became a member of the senate of the Berlin Acad., and was appointed a director in the Conservatory of Music there. In 1877, J. received the degree MUS. DOC. from the Univ. of Oxford.

JOACHIM, *jō'a-kĥīm*, THE PROPHET: abbct of Floris: 1145–1202, Mar. 30; b. Celico, Italy. He attended the Sicilian court in youth, made a pilgrimage to Palestine, became a Cistercian monk, was appointed abbot of Corace in Calabria 1178, and established the monastery *Sancti Joannis in Flori* among the lonely hills of Sylæ near Cosenza, the strict rules of which were sanctioned by Celestine III. 1196. The congregation *Ordo Florensis* sprang from this monastery. J. protested in prophetic denunciation against existing ecclesiastical abuses, formulated a scheme of the past and future course of the divine kingdom, and prophesied the downfall of the papacy. He left numerous commentaries and a treatise, *The Everlasting Gospel*, which was condemned by Roman councils 1215, 1260. He had many followers who called themselves *Joachimites*, but when the world did not come to an end 1260 according to his prophecy they rapidly dispersed.

JOACHIMSTHAL, *yō'ā-čĥims-tál*: town of Bohemia, near the frontier of Saxony, 69 m. w.n.w. from Prague. It is in a valley, on the Weseritz, a feeder of the Eger which flows into the Elbe, near the e. opening of a remarkable gorge or pass among the lofty Erzgebirge, 2,366 feet above the sea. The town has a strange antique appearance, and the Rathhaus is a very remarkable building. J. was for-

JOAN.

merly of greater importance than now, owing to its mines of silver, which, though less productive, are still wrought. The produce of the silver mines of J. in the 16th c. was, at an average, 21,897 marks. For about a century before 1852, the average produce was only 3,181 marks; (1852-62) 3,232 marks. Silver-mines have been wrought at J. from a very remote period; one mine is 300 fathoms deep. The whole number of miners employed at J. in the 16th c. was about 12,000, with 400 overseers and other officials, and 800 surveyors. Besides the silver obtained from the mines of this neighborhood, it produces also lead, tin, and iron to a considerable amount. J. is the seat of offices and courts of mines. Dollars (*thalers*) were first coined here, and hence their name (see DOLLAR). Goitre and cretinism are lamentably prevalent. Much coarse lace is made in the surrounding mountainous districts. Pop. (1880) 5,336.

JOAN, *jōn*, POPE: a supposed female occupant of the papal chair in the 9th c. The popular story represents this singular personage as of English parentage, but educated at Cologne, Rome, and ultimately Athens, in all which places in the assumed character of a man, and under the name of *Joannes Anglicus*, 'John of England,' she is alleged to have attained great distinction as a scholar. The narrative adds, that having come in the end to Rome, she had ability and adroitness enough to carry the deception so far as to obtain holy orders, and to rise through various gradations to the papal sovereignty itself; but that being nevertheless of immoral life, the fraud was at length discovered, to the infinite scandal of the church, by her becoming pregnant, and being seized with the pains of childbirth on the occasion of a public procession to the Lateran palace. The story had obtained currency, certainly, in the latter part of the 13th c. It was inserted, though discredited, by Platina in his *Lives of the Popes*, but the statement does not appear to have been much discussed until the 16th c., when the commentator of Platina, Panvinus, inserted a note in refutation of it. Such currency had the story attained that in 1400 a bust of the woman pope was placed with those of the other popes in the cathedral of Siena, inscribed 'John VIII., a woman from England.' Later Rom. Cath. historians have published replies to the objections against the papal succession which their adversaries drew from the story of the female pope; but it is curious that the most complete and elaborate investigation of the question was that of a Calvinist divine, Blondel, who demonstrated the historical groundlessness of the story. He was followed on the same side by Leibnitz; and though attempts have been made from time to time to maintain the tale, it has been almost universally discarded, its latest patron being Prof. Kist of Leyden, who, but a few years since, produced an elaborate essay, *Verhandeling over de Pausin Joanna*, on the subject. A few words will show the state of the historical evidence. The place assigned to the supposed papess is between the historical popes Leo IV. and Benedict III., the latter of whom died 858, Mar. 10. It is alleged that the Joan of the story occupied the papal chair for two

JOANNES—JOAN OF ARC.

years and five months. Now, according to all the chroniclers, with the doubtful exception of Marianus Scotus, Leo IV. did not die till 855, July 10, so that the interval between his death and that of Nicholas I., successor of Benedict III., would be entirely filled up by the two years and five months of the papess, and no room would be left for the undoubted pontificate (of two and a half years) of Benedict III. Further, Hincmar of Rheims, a contemporary, in his 26th letter to Nicholas I., states that Benedict III. succeeded Leo IV. immediately. It is proved, moreover, by the unquestionable evidence of a diploma still preserved, and of a contemporary coin which Garampi has published, that Benedict III. was actually reigning before the death of Emperor Lothaire, which occurred toward the close of 855. The earliest authorities for the story of Pope J., not reckoning a more than doubtful ms. (not found in the original text—see Döllinger's important work, below) of Marianus Scotus, are Martinus Polonus and Stephen de Bourbon, who wrote about 1225. But Döllinger asserts that the passage in Martinus Polonus is an interpolation between 1278 and 1312. Döllinger traces the origin of the story to the Dominicans who had a grudge against the papacy on account of their treatment by Benedict III.—See Gieseler's *Kirchengeschichte*, th. ii. b. ii. s. 5; Wensing's *Over de Pausin Johanna* (Hague, 1845); Döllinger's *Papstfabeln des Mittelalters* (Munich 1863—also in English trans., pub. in England and the United States); and Bianchi Giovini's *Esame Critico degli atti relativi alla Papessa Giovanna* (Milan, 1845).

JOAN'NES, ISLAND OF: see MARAJO.

JOANNITE, n. *jō-ăn'nīt*, or JOHANNITE, n. *jō-hăn'nīt*, or JOHANNISTS: in *chh. hist.*, one of the followers of John Chrysostom (q.v.). The sect became extinct about 438.

JOAN OF ARC, *jōn of ârk* (Fr. JEANNE D'ARC. F. *zhân-dârk*, properly *Joanneta Darc*), THE MAID OF ORLEANS: abt. 1411–1431, May 30; b. in the village of Domremy, dept. of Vosges, France; of respectable parentage. She was taught, like other young women of her station in that age, to sew and to spin, but not to read and write. She was distinguished from other girls by her greater simplicity, modesty, industry, and piety. When about 13 years of age, she believed that she saw a flash of light, and heard an unearthly voice, which enjoined her to be modest, and to be diligent in her religious duties. The impression made upon her excitable mind by the national distresses of the time, soon gave a new character to the revelations which she supposed herself to receive, and when 15 years old, she imagined that unearthly voices called her to go and fight for the Dauphin. Her story was at first rejected, as that of an insane person; but she not only succeeded in making her way to the Dauphin, but in persuading him of her heavenly mission. She assumed male attire and warlike equipments, and with a sword and a white banner, she put herself at the head of the French troops, whom her example and the notion of her heavenly mission inspired with new enthusiasm. 1429, Apr. 20, she

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threw herself, with supplies of provisions, into Orleans, then closely besieged by the English, and May 4-8 made successful sallies upon the English, which compelled them to raise the siege. After this important victory, the national ardor of the French was rekindled to the utmost, and Joan became the dread of the previously triumphant English. She conducted the Dauphin to Rheims, where he was crowned, 1429, July 17, and Joan, with many tears, saluted him as king. She now wished to return home, deeming her mission accomplished; but Charles importuned her to remain with his army, to which she consented. It was a frightful mistake. The soldiers considered her almost a goddess, and her naturally enthusiastic temperament was developed beyond all bounds. Now, however, because she no longer heard any unearthly voice, she began to have fearful forebodings. She continued to accompany the French army, and was present in many conflicts, till, 1430, May 24, she threw herself, with a few troops, into Compiègne, which the Burgundian forces besieged; and being driven back by them in a sally, was taken prisoner, and sold by the Burgundian officer to the English for a sum of 16,000 francs. Being conveyed to Rouen, the headquarters of the English, she was by them, at the instance of the Univ. of Paris, delivered to the Inquisition for trial as a sorceress and heretic; and after a long trial, accompanied with many shameful circumstances, she was condemned to be burned to death. She recanted her alleged errors at the stake, and expressed penitence, in the hope of having her punishment commuted into perpetual imprisonment; and pardon was granted her. But this did not accord with the views of those in whose power she was. Words which fell from her when subjected to great indignities, and the fact that she was induced by her attendants to resume male attire, were made grounds of concluding that she had relapsed, and she was again brought to the stake, 1431, May 30, and burned on the street at Rouen. Her family, who had been ennobled on her account, obtained, 1440, a revisal of her trial; and 1456, the pope formally pronounced her to have been innocent. The verdict of history on this unfortunate girl is that she was of a nature generous, ardent, pure, and true, though excitable and liable to hallucinations.

Few facts in history are better authenticated than the death of 'the Maid' at Rouen 1431; yet grave doubts have been raised in this as in many similar cases. There was a popular belief at the time that some one had been executed in the place of Joan; and many pretended Maids appeared, who, however, were punished as impostors. But a Father Vignier, in the 17th c., found among the archives of Metz a paper purporting to be written at the time, and giving an account of the arrival at Metz, 1436, May 20, of the Maid Jeanne, who was at once recognized by her two brothers, and was subsequently married to a Sieur de Hermoise. Vignier afterward found in the family muniment-chest of M. des Armoise, in Lorraine, a contract of marriage between 'Robert des Armoise, Knight, with Jeanne D'Arcy,

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surnamed the Maid of Orleans.' In addition to this, there was found, 1740, among the archives of the Maison de Ville of Orleans, under the dates 1435, 1436, a record of certain payments to a messenger bringing letters from Jeanne the Maid, and also to her brother John du Lils or Lys. (De Lys was the name, by which the family of Darc was ennobled.) A subsequent entry, 1439, Aug. 1, records a gift on the part of the council of the city for services rendered by her at the siege.—See Quicherat's *Condamnation et Réhabilitation de Jeanne d'Arc* (1850); Delepierre's *Doute Historique* (1855); Wallon's *Jeanne d'Arc* (1867). She was beatified in 1894 by Pope Leo XIII.

JOB, v. *jōb* [Ir. and Gael. *gob*, the beak or bill of a bird; W. *gwp*, a bird's head and neck]: in *OE.*, to peck with the beak as a bird; to strike suddenly with a sharp instrument. **JOB'BING**, imp. **JOBBED**, pp. *jōbd*.

JOB, n. *jōb* [*OE.* *gob*, or *job*, a portion, a lump; *jobbel*, or *jobbet*, a small load: *OF.* *gob*, a mouthful]: a piece of chance or odd work; a certain amount of work; a piece of work undertaken at a stated price; a disreputable transaction or undertaking for profit, effected by one secretly, under the guise of public zeal, or under the shadow of official power. **V.** to buy and sell, as a broker; to work at chance employment; to hire out or let, as horses. **JOB'BING**, imp.: **ADJ.** buying and selling, as a jobber: **N.** the practice of taking jobs for profit; the purchasing from importers in order to sell to retailers. **JOBBED**, pp. *jōbd*. **JOB'BER**, n. *-bēr*, a person who undertakes to perform small pieces of work; a dealer on the Stock Exchange who is the intermediate agent between the stock-broker and the public; a petty dealer in cattle, etc. **JOB'BERY**, n. *jōb'bēr-ī*, the unfair means used to accomplish some party object or questionable act. **JOBGING OFFICE**, a printing office where small jobs are undertaken, as the printing of handbills, etc. **JOB-LOT**, a lot of odd or rejected goods, sold at a considerable reduction. **JOB-MASTER**, one who lets out horses and carriages. **JOB-PRINTER**, one in a small way of business. **BY THE JOB**, at a stipulated price for the piece of work. **TO DO THE JOB FOR**, to kill.

JOB, *jōb* [Heb. *Jyob*, derived by Gesenius from *ayab*, 'to be an adversary;' hence (passive) 'one who has an adversary,' or 'a persecuted one']: leading personage in one of the canonical books of the Old Testament, the book of Job. He is said to have lived in the land of Uz (Sept. *Ausitis*, cf. Ptol. v. 19. 2), a locality somewhere between Idumea, Palestine, and the Euphrates. Whether Job was a real or a fictitious personage, has been discussed by critics. The Talmud (Baba Bathra, xv. 1) holds that 'Jjob never was, and never was created, but is an allegory.' The belief of most scholars at present is that the Book of Job is a great dramatic poem, built on a basis of historical tradition. Job is a real person whose life supplied a certain genuine groundwork of antique fact; and on this was built up a structure of incident, sentiments, and speech, by the creative power of a sublime and inspired imagination. Who

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was the author, and when he lived, has not been determined. Some critics make him anterior to Moses; the LXX. identifies him with 'Jobab, King of Edom' (Postscr. to Job); others, among whom are many of the Talmudical authorities, regard Moses himself as the author. The Mosaic *period* is claimed for it by Saadia, many of the church fathers, Michaelis, Jahn, Hufnagel, etc. More probable for some reasons is the view of Gregory Nazianzen, Luther, Döderlein, and others, who assign the work—which shows a certain affinity with the Proverbs—to the age of Solomon, when Hebrew poetry was in its full bloom, and a broad catholic spirit pervaded the nation; some have even given Solomon himself the credit of its composition. The reference to the gold of Ophir seems conclusive against any hypothesis at least that would place its composition earlier. Certain passages in Ezekiel, Jeremiah, Isaiah, Amos, point to an acquaintance with it; yet Rénan considers that it belongs to the first half of B.C. 8th c.; and Ewald pronounces for a still later period, and assigns the poem to the beginning of B.C. 7th c. This date is advocated also by Dr. Samuel Davidson in his *Introduction to the Old Testament* (Lond. 1862). Others, again—among whom Clericus, Grotius, Gesenius, Umbreit, Knobel, De Wette, etc.—place it in the period of the exile. The period of Solomon seems on the whole to many eminent recent scholars the most probable date; though it cannot be denied that on this theory the lack of any reference to the Mosaic law, the priesthood, the temple, the sacrifices, and to the Hebrew history, is very difficult of explanation if the writer was a Hebrew.

The earlier German scholars, Herder, Eichhorn, etc., looked upon the author as an Edomite—not a Hebrew at all; but this view is now generally abandoned. The poem is a genuine product of the Hebrew muse, not, however, standing on narrow national ground—the very scene being laid in a foreign country—but on the broad ground of a universal humanity:—it is the attempt of a Hebrew thinker, of enlarged mind, to vindicate the Divine government of the world.

Concerning the design of the poem, various theories have been advanced. According to Dr. Davidson, it was 'to demonstrate the insufficiency of the current doctrine of compensation.' It condemns the notion that there is a *necessary* connection between sin and suffering, and without explaining the *cause* of the latter in the case of a good man, displays the most sublime trust in the wisdom of the Divine Providence. It exhibits a noble spirituality; and in several places, the mysterious contradictions of life seem to awaken in the soul of the writer thoughts of another life beyond the grave, in which God will vindicate the righteousness of His ways. As a work both of genius and art, it occupies well-nigh the first rank in Hebrew literature, and is unsurpassed in sublimity of imaginative thought by any poem of antiquity. The language is a wonderful combination—elaborate in the highest degree, yet grandly simple withal. betokening not a primitive

JOBE—JOB'S TEARS.

period in Jewish history, but one highly advanced. The dramatic construction of the poem indicates the same. It has a prologue and epilogue; the dialogues are arranged into three series; each of these, again, consists of three speeches by Job's friends, with three replies by Job himself. The three friends are unsympathetic in feeling, and harsh in speech with the harshness which pertains to a self-satisfied righteousness. The fourth, Elihu, adds the element of youthful positiveness and censoriousness. Job spreads out a doleful and pathetic complaint, refusing to plead guilty to the accusations which his friends offer as consolations; and while in the main nobly keeping his trust and submissiveness toward God, yet is driven in his agony, and under the taunts of his wife and the persistent charges of his friends, to the use of hasty words, complaining that God appears as his enemy, and challenging the Most High to bring forth against him the hidden sins of which he had been accused. For this God reproves him, but also restores and comforts him. The poem (properly so called) opens and closes with a monologue by the author of the book. The different character of the persons introduced is skillfully observed; their words have a rhythmic flow; and the dialogues are even strophically divided (see Ewald, *Das Buch Jjob übersetzt und erklärt, Zweite Auflage*). The integrity of the poem in its present form has been strongly questioned by many critics—e.g. Delitzsch; the evident inferiority (in a literary and poetic point of view) of the passages containing the speeches of Elihu (xxxii.—xxxvii.), and less evidently the nature of the prologue and epilogue, are thought to indicate that these passages are the work of a later hand. Compare the commentaries of Schultens, Bertram, Eichhorn, Rosenmüller, Ewald (with translation), Umbreit, De Wette, Hirzel, Stickel, Schlottmann, Rénan (with an admirable translation into French), Lee, Dillmann, Cox, A. B. Davidson.—In the recent Canterbury revision of the Bible, the Book of Job gains greatly in clearness, vividness and power—both as to its deep philosophic thought and as to its sublime poetic imagery.

JOBE, v. *jōb* [after *Job* the patriarch]: in *university slang*, to reprimand; to take to task. JO'BING, imp. JOBED, pp. *jōbd*. JOBATION, n. *jō-bā'shūn*, a taking to task, as in the case of Job by his friends; a scolding.

JOB'S TEARS (*Coix lachryma*): a corn-plant of India; a grass, rising to the height sometimes of 8 ft., with the stout habit of maize, to which it is botanically allied; but the male and female flowers grow close together in spikelets, produced in axillary clusters. The name is from the tear-like form of the hard, shining, bluish-white seeds, which are sometimes made into bracelets and necklaces, and are also an article of food. This plant is cultivated in many parts of India, but it is one of the least valuable of the cereals. It has become almost naturalized in Spain and Portugal, and flour made from it is there used, though chiefly as a resource of the poor in times of scarcity.

JOCKEY—JOE MILLER.

JOCKEY, n. *jŏk'ĭ*, **JOCK'EYS**, n. plu. *-ĭz* [from *Jackey*, a dimin. of *Jack*: Scot. *Jockie*, a dimin. of *Jock*]: a man or boy that rides horses in a race; a dealer in horses; a cheat: V. to play the jockey towards; to cheat; to deceive in trade. **JOCK'EYING**, imp. *-ĭ-ing*: N. the act of one who jockeys; the act of maneuvering. **JOCK'EYSHIP**, n. manage mentor maneuver, as of a jockey; clever tactics. **JOCKEYED**, pp. *jŏk'ĭd*, cheated. **JOCK'EYISM**, n. *-ĭ-izm*, the practice of jockeys in riding or cheating.

JOCOSE, a. *jŏ-kŏs'* [L. *jocŏsŭs*, jocose—from *jŏcŭs*, a joke or jest]: given to jokes and jesting; containing a joke; merry; sportive; waggish. **JOCOSE'LY**, ad. *-lĭ*. **JOCOSE'NESS**, n. *-nĕs*, the quality of being jocose; waggery.—**SYN.** of 'jocose': facetious; jocular; witty; pleasant; comical.

JOCULAR, a. *jŏk'ŭ-lĕr* [L. *jŏcŭlārĭs*, jocular, droll—from *jŏcŭs*, a joke]: given to pleasantry; sportive; merry. **JOC'ULARLY**, ad. *-lĭ*. **JOC'ULAR'ITY**, n. *-lār'ĭ-tĭ*, merri-ment; disposition to jest; jesting.—**SYN.** of 'jocular'—see **JOCOSE**.

JOCUND, a. *jŏk'ŭnd* [L. *jocun'dus*, pleasant, agreeable—from *jŏcŭs*, a joke]: lively; gay; light-hearted. **JOC'UNDLY**, ad. *-lĭ*. **JOC'UNDNESS**, n. *-nĕs*, or **JOCUNDITY**, n. *jŏ-kŭn'dĭ-tĭ*, state or quality of being jocund; mirth.

JODELN, *yŏ'dln*: peculiar manner of singing with the falsetto voice in harmonic progressions, heard only among the Tyrolese and the Swiss.

JODHPUR': see **JOUDPORE**.

JOEL, *jŏ'ĕl* [Heb. Jehovah is God]: son of Pethuel, one of the 12 Minor Prophets, who delivered his predictions, according to some, in the days of Joash; others, however, place him variously, in the time of Hezekiah, Manasseh, Josiah, Uzziah, etc. Concerning the circumstances of his life, absolutely nothing is known. The occasion of his prophecy was an extraordinary plague of locusts, accompanied by an extreme drought, which consumed the land. After describing these judgments, the prophet calls upon his countrymen to repent, and assures them that God is ready to forgive. Extraordinary warmth and tenderness of feeling, with an enthusiastic belief in the glory of the future destiny of the people, run through the whole book. Some of the passages have been understood by theologians as predictive of the blessings of the Messianic age, and one is actually applied by the apostle Peter to the events which transpired on the day of Pentecost (Acts, ii. 16–21). The style of J., always vivid and eloquent, sometimes sublime, is perhaps the finest of any Old Testament writers. One of the most elaborate works on J. is Credner's *Der Prophet Joel*. Compare Ewald, Umbreit, Henderson, etc.

JOE MILLER, *jŏ mĭl'lĕr*, a jest-book: a person on whom all kinds of jests were fathered; a stale joke.—**JOE MILLER'S JESTS**, or **THE WIT'S VADE MECUM**, a well-known collection of facetiæ first published 1739. **A great**

JOE MILLER.

proportion of the good things which this book contained appears to have been the product of the period immediately preceding its publication. They are more often humorous than witty, and seem to have owed their popularity to a coarseness and indecency, such as the taste of the present age could not endure. A second edition of the *Jests* was called for in a year; they came to a fourth edition in the following year; and the work, growing in size at every fresh appearance, reached its 14th edition 1760. Innumerable issues of it, or of works founded on it, bearing the same or similar titles, have been published in England and America. It has, in many cases, been modified to suit the better taste of the public; but its humor seems of the kind that flourishes upon obscenity as weeds upon manure. A lithographic fac-simile of the first edition, now exceedingly rare—there is no copy in the British Museum—was published 1861. The exact title was as follows: '*Joe Miller's Jests, or the Wit's Vade-Mecum; being a Collection of the most Brilliant Jests, the Politest Repartees, the most Elegant Bons-mots and most Pleasant Short Stories in the English Language.* First carefully collected in the Company, and many of them transcribed from the Mouth, of the Facetious Gentleman whose name they bear; and now set forth and published by his Lamentable Friend and Former Companion, Elijah Jenkins, Esq.; most humbly inscribed to those Choice Spirits of the Age, Captain Bodens, Mr. Alexander Pope, Mr. Professor Lacy, Mr. Orator Henley, and Job Baker, the Kettle-drummer. London, T. Read, Dogwell Court, Whitefriars, Fleet Street, 1739.'

The 'Joe Miller' was Joseph Miller (prob. 1684–1738; b. prob. in London); eminent comic actor, reputed among the tavern-haunters of his time as a fellow of infinite humor; he died in London, and was buried in the churchyard of St. Clement Danes in the Strand, where there is a tombstone to his memory, bearing an epitaph by Stephen Duck. He was a great favorite with the public, and is said to have contributed by his acting to the popularity of Congreve's plays. Ben in *Love for Love*, Sir Joseph Witol in the *Old Bachelor*, and Teague in the *Committee*, were the characters in which he was most successful. The compiler of the *Jests* was John Mottley (1692–1750, Oct. 3; b. London); an author of little reputation, who is said to have amused himself by writing down or dictating them at a time when he was laid up with the gout: he was son of Col. Mottley, who, having been high in favor with James II., followed James into exile, got a command in the service of Louis XIV., and was killed at the battle of Turin 1708. Young Mottley got a place in the Excise Office, which he lost 1720; and afterward, though he had promises from Lord Halifax and Sir Robert Walpole, he never obtained an office. He had to live by his wits, and he produced five or six plays—the first of them named the *Imperial Captive*—which had some success. He seems to have had the patronage of people of fashion and of the court. In 1739, the year in which he produced *Joe Miller's Jests*, he published also a *Life of the great Czar Peter*, 3

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vols. 8vo. This work was published by subscription, and had the support of the royal family, and of a great number of the nobility and gentry. He followed it, 1744, with the *History of the Life and Reign of the Empress Catharine of Russia*, 2 vols. 8vo. These works were mere compilations from the journals and other publications of the time; but with the lapse of time they have acquired some value, through the scarcity or disappearance of the authorities on which they were founded.

JOG, v. *jög* [Gael. *gagaich*, to stutter; *gog*, the nodding or tossing of the head; comp. Gael. *seog* = *shög*, to dandle, to swing to and fro: W. *gogî*, to shake (see JAG)]: to move, push, or touch gently by way of reminder; to push with the hand or elbow; to shake slightly; to walk or travel slowly, idly, or heavily: N. a slight shake; a push. •JOG'GING, imp.: N. a slight push or shake. JOGGED, pp. *jögd*. JOGGER, n. -*ger*, one who walks slowly and heavily. JOG-TROT, n. [comp. Gael. *diog* = *jög*, a slight effort]: a swinging motion in walking; a slow, regular pace or motion: ADJ. easy-going; simple. JOGGLE, v. *jög'l* [dim. of *jog*]: to shake slightly; to give a sudden but slight push to. JOGGLING, imp. *jög'ling*. JOGGLED, pp. *jög'ld*. JOGGLE, n. in *masonry*, notch of curve in the joints.

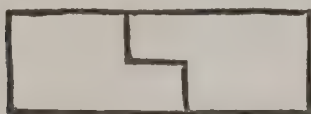


Fig. 1.



Fig. 2.

adopted in fitting stones together, to prevent them from slipping. Fig. 1 is a common form. The joggle-joint is commonly used in straight arches for this purpose, as in fig. 2. Joggles are used also where very tight joints are required to resist water, etc. Sometimes the joggle consists of a piece of hard stone let into a groove cut in both the stones forming the joint (see fig. 3).



Fig. 3.

JOGGLE: see JOG.

JO'GHIS: see YOGA: YOGIN.

JOHANNA, *jō-hän'a*: one of the Comoro Islands (q.v.).

JOHANNES, n. *jō-hän'nēz* [Gr. *Ioän'nēs*, John]: a Portuguese gold coin of the value of eight dollars.

JOHANNISBERG, n. *jō-hän'nīs-bērg* [from a castle near Wiesbaden, where the grapes from which the wine is prepared are grown]: a Rhenish wine of the finest quality.

JOHN—JOHN XII.

JOHN, n. *jŏn* [new L. *Johan'nēs*; Gr. *Iōān'nēs*, John]: a common Christian name. **JOHN BULL**, -*bŭl*, a name applied to the whole English people, sometimes as a term of depreciation, and sometimes of high praise. **JOHN-A-DREAMS**, one given to day-dreaming and building castles in the air; a sleepy-headed, dull man. **JOHN DORY**, an excellent fish, common in the European seas: see **DORY**.

JOHN: Apostle of the Lord Jesus, and Evangelist: b. Bethsaida; son of Zebedee (a fisherman of the Sea of Galilee) and of Salome. Till J. was called by the Lord Jesus to be his disciple, he seems to have followed his father's occupation. After the outpouring of the Spirit on the day of Pentecost, J. appears to have labored for the spread of the Gospel first in Jerusalem and Samaria, and afterward to have had his residence chiefly in Ephesus. During the reign of Emperor Domitian, he was driven by persecution to the isle of Patmos, but returned to Ephesus under Nerva, and died there at a great age. The dates assigned to this event range from A.D. 89 to 120, and in any case he must have long survived his brother apostles. It is believed that he was the only one of the Lord's apostles who died a natural death. Tradition accounts for this by representing his life as miraculously preserved. He is represented in Scripture as of a peculiarly affectionate nature, 'the disciple whom Jesus loved;' and tradition makes his last words to have been, 'Little children, love one another.' The works attributed to him are the Gospel, the three Epistles of John, and the book of the Revelation. These were the ripened product of his later years in which he seems to have been led into the sphere in which he wrought a work as special and unique as that of the Apostle Paul in his sphere. Paul gathered converts and established churches; J. brought into prominence those deep and vital truths concerning the Christ which are the centre of all Christian experience and life. The opening words of his Gospel are like a mighty surge rolling in from an ocean of eternal truth. More than any other of the inspired writers, he also lays open the inner heart of Christ. See **JOHN**, **THE GOSPEL**, etc.: **JOHN**, **THE EPISTLES OF**: **REVELATION OF JOHN**, **THE**.

JOHN XII., Pope: 938-964 (reigned 955-964); son of Alberico, and grandson of the notorious Marozia, a woman who, during the pontificate of John X. (913-927), ruled with almost supreme power at Rome. John was originally named Octavianus, and on the death of Pope Agapitus 955, being elected pope through the lawless intrigue or violence of the dominant party, when only in his eighteenth year, was the first in the papal line to originate the now familiar practice of changing his name. His life, according to accounts which it is impossible to discredit, was what might be expected from such antecedents, scandalous and disorderly; and though he had crowned Otho emperor and king of Italy 962, that monarch, in 963, in a synod of the clergy, overstepping all the ordinary rules of canonical procedure and legal precedent, caused sentence of depo-

JOHN XXII.—JOHN.

sition for scandalous life to be pronounced against John, and Leo VIII. to be elected in his stead. John, however, re-entered Rome in the following year with a strong party, and drove out Leo; but his career was cut short by a dishonorable death: he was killed, according to Luitprand, while prosecuting an unlawful intrigue 964. In his effeminacy or licentiousness, Panvinus and other historians find the origin of the fable of Pope Joan.

JOHN XXII. (JACQUES D'EUSE), Pope: reigned 1316–1334; d. 1334; one of the most celebrated of the popes of Avignon. He was elected pope on the death of Clement V. Attempting to carry out in very altered circumstances, the vast and comprehensive policy of Gregory VII. and Innocent III., John interposed his authority in the contest for the imperial crown between Louis of Bavaria and Frederick of Austria, by not only espousing the cause of the latter, but even excommunicating his rival. The public opinion, however, and the political relations of the papacy founded upon it, had already begun to change. The diet of Frankfurt refused to obey, and a long contest ensued, not only in Germany, but also in Italy, where the Guelph or papal party was represented by Robert, King of Naples, Frederick of Sicily being the chief leader of the Ghibellines. The latter was placed by John under the same ban which had already been proclaimed against Louis; but 1327, Louis came to Italy in person, and having been crowned at Milan with the iron crown, advanced upon Rome, expelled the papal legate, and was crowned emperor in the church of St. Peter's by two Lombard bishops. Immediately on his coronation, he proceeded to hold an assembly, in which he caused the pope, under his original name, to be thrice summoned, to answer a charge of heresy, and breach of fealty; after which he caused him to be desposed, and Peter de Corvara, a monk, to be elected pope, under the title Nicholas V. These measures, however, were attended with little result. Louis returned to Germany, and the Guelphic predominance at Rome was restored, the papal representative resuming his authority. But John XXII. never personally visited Rome, having died at Avignon 1334, when, though without incurring the suspicion of personal aggrandizement, he had accumulated in the papal treasury by means of *annates* (q.v.), the enormous sum of 18,000,000 florins of gold. J.'s persistent animosity to the Franciscans was one of the influences which prepared the way for the Reformation. This pope is remarkable in theological history as the author of that portion of the canon law called the *Extravagantes*; also as having held the opinion, pronounced heretical by most theological authorities, that the just at death fall asleep, and will not be admitted to the beatific vision in heaven until after the general resurrection. This opinion, which he had ardently advocated, he formerly retracted before his death.

JOHN (LACKLAND), King of England: 1167, Dec. 24—1216, Oct. 19 (reigned 1199–1216); b. Oxford; third King

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of the Plantagenet family; youngest of the five sons of Henry II. by his wife, Eleanor of Guienne. His father having obtained a bull from the pope authorizing him to invest one of his sons with the lordship of Ireland, J. was appointed in a council at Oxford 1178, and 1185, Mar., he went over to take the reins of government, but governed so badly that he was recalled in the following December. J. latterly united with his brothers in their rebellions against their father, and it was the sudden communication of the news of his having joined his brother Richard's rebellion that caused the death of Henry.

When Richard I. succeeded to the crown, he conferred on his young brother earldoms which amounted to nearly one-third of the kingdom. This did not, however, prevent J. endeavoring to seize the crown during Richard's captivity in Austria. J. was, however, pardoned, and treated with great clemency, and is said to have been nominated his successor by his brother on his death-bed. J. hastened, at his brother's death, to obtain the support of the continental barons, and then started for England, and was crowned at Westminster. Arthur, son of his elder brother Geoffrey, was lineally rightful heir to the crown, but at this time the law of primogeniture was not perfectly established. The claims of Arthur were supported by Anjou and the king of France, but J. bought off the latter influence. J. now obtained a divorce from his first wife, Hadwisa of Gloucester, and married Isabella of Angoulême. In the war which ensued, Arthur, who was again assisted by France, was taken prisoner, and confined in the castle of Rouen, where there is every reason to believe that he was privately put to death; but the English monarch lost Normandy, Touraine, Maine, and Anjou.

J. now quarrelled with Pope Innocent III., refusing to accept as Abp. of Canterbury Stephen Langton (q.v.) whom the pope had appointed. Innocent placed the kingdom under an interdict; while J., in return, confiscated the property of the clergy who obeyed the interdict, and banished the bishops. Otherwise, too, he displayed considerable activity. He compelled William, King of Scotland, who had joined his enemies, to do him homage (1209), put down rebellion in Ireland (1210), and subdued Llewellyn, the independent prince of Wales (1212). The pope, 1213, solemnly deposed J., and absolved his subjects from their allegiance, and commissioned Philippe Auguste to execute his sentence. J., denounced by the church, and hated for his cruelty and tyranny by his subjects, found his position untenable, and was compelled to make abject submission to Rome, and hold his kingdom as a fief of the papacy. Philippe proceeded with his invasion scheme, though no longer approved by Rome; but the French fleet was totally defeated in the harbor of Damme, 300 of their vessels being captured, and above 100 destroyed. Subsequent events, however, proved more favorable to France, and at length the English barons saw the opportunity to end the tyranny of J.: they drew up a petition, which was rejected by the king, and this was the signal for war. The army of the

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barons assembled at Stamford, and marched to London; they met the King at Runnymede, and as the city of London gave its adhesion to the barons and the king found himself abandoned by all, he yielded; and the Great Charter, the basis of the English constitution, was signed 1215, June 15 (see MAGNA CHARTA). The pope disapproved, and soon annulled the charter, and the war broke out again. The barons now called over the dauphin of France to be their leader, and Louis landed at Sandwich 1216, May 30. In attempting to cross the Wash, John was overtaken by the tide, lost his regalia and treasures; was taken ill, and died at Newark Castle.—Beside the granting of Magna Charta, John's reign was signalized by the absorption of the Norman nobility into the English people, resulting from the separation of Normandy from the English possessions; and by the beginning of public discontent with papal domination of the government.

JOHN III. (JOHN SOBIESKI), King of Poland: one of the greatest warriors of the 17th c.: 1624, June 2—1696, June 17 (reigned 1674–96); son of Jakob Sobieski, Castellan of Cracow, a man of virtuous character and warlike spirit, who educated John and his brother Mark with utmost care. The brothers travelled in France, England, Italy, and Germany. Their father's death recalled them home 1648. The Poles were defeated by the Russians in the battle of Pilawiecz. The Sobieskis took up arms to restore the fortunes of their country. Mark fell in battle on the banks of the Bog; John distinguished himself by his valor, and became the admiration of his countrymen and the dread of the Tartars and Cossacks. He received the highest military dignities and appointments, and 1673, Nov. 11, defeated the Turks in the great battle of Choczim, in which they lost 28,000 men; after which he was, 1674, May 21, unanimously elected king of Poland, and was crowned in Cracow with his wife, Maria Casimir Louisa, daughter of the Marquis Lagrange d'Arquien, and widow of the woiwode John Zamoisli. When the Turks besieged Vienna 1683, John hastened thither with 20,000 Poles, and with the German auxiliaries who had also come up, raised the siege by the victory of Sep. 12 of that year. In this battle he took the banner of Mohammed, which he sent to the pope. On his entrance into Vienna he was received with unbounded enthusiasm by the inhabitants. His subsequent undertakings against the Turks were not equally successful. He died of apoplexy. John Sobieski was not only a statesman and warrior, but a lover of science, and a man of gentle disposition and agreeable manners; but his constant wars prevented that attention to the internal condition of Poland which its critical situation urgently required, and this misfortune occasioned his neglect of evils which were among the causes of the downfall of Poland.

JOHN, BAPTIST JOSEPH FABIAN SEBASTIAN: Archduke of Austria; distinguished Austrian prince and general: 1782, Jan. 20—1859, May 10; sixth son of Emperor Leopold II., and of the Infanta Maria Louisa, daughter of Charles III.

of Spain. He early gave proof of talent for military affairs; and in 1800, he received command of the defeated Austrian army, formerly under Kray. His military career was not brilliant. He was defeated at Hohenlinden 1800, and at Austerlitz 1805. In the war of 1809, he advanced with an Austrian army into Italy, defeated the viceroy Eugène at Sacile, and made his way as far as the Adige, when the reverses of the Austrian forces at Landshut, Eckmühl, and Ratisbon compelled him to retire. His love of natural science was early manifested and continued undiminished amid all the vicissitudes of his life; and Austria is indebted to him for many valuable scientific institutions and enterprises. Living in political retirement, and interested in public improvement, he became exceedingly popular; so that when the German national congress assembled after the commotions of 1848, he was called by a great majority of voices, June 29, to be Vicar or Regent of the Germanic empire. The fall of Metternich had also, in the meantime, released him from his political isolation in Austria; and Emperor Ferdinand had placed him at the head of affairs there, and intrusted to him the opening of a constitutional assembly in Vienna. In his high office as Regent, the archduke acted on strictly constitutional principles; but the progress of events being unfavorable to the Austrian interests, he resigned his office 1849, Dec. 20, and returned to Grätz, where he lived, as formerly, in retirement till his death.

His marriage was of the romantic kind. Late on a January evening in 1827, he had occasion for the services of the postmaster of Aussee, a mountain-village in the vicinity of Grätz. The postmaster was absent; but his daughter, Anna Plochel, volunteered to drive him over the hill to his destination. The conversation and spirit of this maiden charmed the archduke, and within three weeks he married her. The titles of Countess of Meran and Baroness of Brandhof were subsequently conferred on her: see MORGANATIC MARRIAGE.

JOHN OF DAMASCUS: see DAMASCENUS.

JOHN OF GAUNT, *gánt*, or of GHENT, *gënt*: Duke of Lancaster and Aquitaine, and titular King of Castile: 1339-1399, Feb. 3; b. Ghent; fourth son of Edward III. He married Blanche, daughter of the Duke of Lancaster, 1359; distinguished himself in the wars of his brother, the Black Prince, in France; was father of the first English king of the house of Lancaster, Henry IV., 1399; on the death of his wife married Constance, daughter of Peter the Cruel of Castile, and took the arms and title of king of Castile 1370; served in the wars in France and Scotland; invaded Castile and unsuccessfully attempted to wrest the throne from Henry of Trastamara 1386; became the friend and defender of Wickliffe on his return to England; married his daughter to Henry of Castile 1388; and for his third wife married Catharine Swynford, ancestress of the Beaufort and Tudor families. After the marriage of his daughter he returned to Castile, was created Duke of Aquitaine, and employed in embassies to France which resulted in a treaty

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of peace. Besides J.'s descendants in the direct male line who were English kings of the House of Lancaster, he was, through his daughters, the ancestor of more than one line of kings of other countries; and was ancestor, through his third wife, of the Tudor and Stuart sovereigns, and of James I. of England, whose descendants have reigned in England ever since.

JOHN OF LEYDEN, *liden* (properly JOHN BOCKELSON or BOCKOLD): 1510–1536, Jan. 26; b. Leyden; son of a bailiff in the Hague, and of a Westphalian bondwoman. He wandered about for some time as a journeyman tailor, and then settled in Leyden, but was fonder of amusements than of his trade. He had some poetic genius, and was noted for his abilities as an actor. Adopting the opinions of the Anabaptists (q.v.), he became one of their wandering prophets. In 1533, he came to Münster, was the chief supporter of Matthiesen or Matthys there, and when Matthiesen lost his life, 1534, became his successor. He set aside the ancient constitution of the city, set up in Münster 'the kingdom of Zion,' appointed judges, and applied in an extravagant manner the principles of the Old Testament theocracy. He himself became 'king of Zion.' It is impossible to account for his conduct, and for his extraordinary influence, without the supposition of real fanaticism, but sensuality, vanity, and bloodthirstiness were intimately combined with it. He introduced polygamy, and displayed a great love of kingly pomp. The city was the scene of horrid excesses. In 1535, June, it was taken by the Bishop of Münster. John and his chief accomplices suffered death with circumstances of fearful cruelty, and his body was suspended in a cage from a high tower. He attempted to save his life by confession and submission. See ANABAPTISTS.

JOHN OF SALISBURY, *sawlz'ber-ŷ*: about 1120–1180, Oct. 25; b. Old Sarum (Salisbury), England: scholar, orator, and poet. He was educated at Oxford Univ., and in France, where he attended the lectures of Abelard and studied the classics, theology, and scholastic logic; conducted a school in Paris; was forced by poverty to seek the hospitality of the abbey of Montier-la-Celle; returned to England, 1151; became sec. to Theobald, Abp. of Canterbury and afterward to Thomas à Becket; went on several diplomatic missions to Popes Eugenius III., Anastasius IV., and Adrian IV.; supported à Becket in his controversy with Henry II., and accompanied him in exile and on his return to England; and was appointed bp. of Chartres, 1176. He wrote a number of works, of which the greatest are *Polycraticus, sive de Curialium Nugis et Vestigiis Philosophorum*; *Metalogicus*; and *Vita ac Passio S. Thomæ*. These, with 302 letters were published, 5 vols., Oxford 1848.

JOHN, PRESTER ('Priest John'): supposed Christian king and priest of a mediæval kingdom in the interior of Asia, the locality of which was vague and undefined. In the 11th and 12th c., the Nestorian missionaries penetrated e. Asia, and made many converts among the Keraeit or Krit

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Tartars, including, according to report, the khan or sovereign of the tribe, Ung (or Ungh) Khan, who resided at Karakorum, and to whom the afterward celebrated Genghis Khan was tributary. This name the Syrian missionaries translated by analogy with their own language, converting *Ung* into 'Jachanan' or 'John,' and rendering *Khan* by 'priest.' In their reports to the Christians of the West, accordingly, their royal convert figured as at once a priest and the sovereign of a rich and magnificent kingdom. Genghis Khan having thrown off his allegiance, a war ensued, which ended in the defeat and death of Ung Khan, 1202; but the tales of his piety and magnificence long survived, and not only furnished the material of numberless mediæval legends (which may be read in Assemani's *Bibliotheca Orientalis*, III. ii. 484), but supplied the occasion of several of those missionary expeditions from Western Christendom, to which we owe almost all our knowledge of mediæval eastern geography. The reports regarding Ung Khan, carried to Europe by the Armenian embassy to Eugene III. (pope 1145-53), created a profound impression; and the letters addressed in his name, but drawn up by the Nestorian missionaries, to the pope, to the kings of France and Portugal, and to the Greek emperor, impressed all with a lively hope of the speedy extension of the gospel in a region hitherto regarded as hopelessly averse to Christianity. They are printed in Assemani's *Bibliotheca Orientalis*. The earliest mention of Prester John is in the narrative of the Franciscan Father, John Carpini, who was sent by Pope Innocent IV. (pope 1243-54) to the court of Batû Khan of Kiptchak, grandson of Genghis Khan. Father Carpini supposed that Prester John's kingdom lay still further to the east, but he did not prosecute the search. This was reserved for a member of the same order, Father Rubruquis, who was sent as a missionary into Tartary by St. Louis, and having reached the camp of Batû Khan, was by him sent forward to Karakorum, the seat of the supposed Prester John. He failed, however, of his hope of finding such a personage, the Khagan of Karakorum, Mangû, being still an unbeliever; and his intercourse with the Nestorian missionaries, whom he found established there, satisfied him that the accounts were grievously exaggerated. His narrative, which is printed in Purchas's *Collection*, is one of the most interesting among those of the mediæval travellers. Under the same vague notion of the existence of a Christian prince and a Christian kingdom in the East, the Portuguese sought for traces of Prester John in their newly-acquired Indian territory in the 15th c. A similar notion prevailed as to the Christian kingdom of Abyssinia, which, in the hope of finding Prester John, was visited so late as the reign of John II. of Portugal (1481-95) by Pedro Covilham and Alfonzo di Payva, the former of whom married and settled in the country.—See Oppert's *Der Priester Johannes* (1864, 2d ed. 1870), and Zarneke's monograph with the same title (1876).

JOHN, ST. or SAINT (geographical): see ST. JOHN.

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JOHN, SAINT, of NEPOMUK, *nā'pō-mók* (properly, **POMUK**): patron saint of Bohemia, saint of the Rom. Cath. Church, and honored as a martyr of the inviolability of the seal of confession: about 1330–1393, Mar.; b. Pomuk, village in the dist. of Klatau. Having entered into orders, he rose rapidly to distinction, being created a canon of the cathedral of Prague, and eventually vicar-gen. of the diocese. The queen, Sophia, second wife of Wenzel or Wenceslaus IV., having selected him for her confessor, Wenceslaus, himself a man of most dissolute life, conceiving suspicions of her virtue, required of John to reveal to him what he knew of her life from the confessions which she had made to him. John steadfastly refused, and the king resolved to be revenged for the refusal. An opportunity occurred soon afterward, when the monks of the Benedictine abbey of Kladran having elected an abbot, in opposition to the design of the king, who wished to bestow the place on one of his own dissolute favorites, John, as vicar-gen., at once confirmed the election. Wenceslaus, having first put him to the torture, at which he himself personally presided, had him tied hand and foot, and flung, already half dead from the rack, into the Moldau. His body, according to the tradition, being discovered by a miraculous light which issued from it, was taken up, and buried with great honor. His memory was cherished with peculiar affection in his native country, and he was eventually canonized as a saint, his feast being on Mar. 20. By some historians, two distinct personages of the same name are enumerated: one, the martyr of the confessional seal; the other, of his resistance to the simoniacal tyranny of Wenceslaus; but the identity of the two is well sustained by Palacky, *Geschichte von Böhmen*, iii. 62.

JOHN THE BAPTIST: the forerunner of Christ: son of the priest Zacharias and of Elizabeth, who was cousin of the Virgin Mary. John was thus the second cousin of the Lord Jesus. The wonderful circumstances of the conception and birth of J., are recorded in Lk. i. After a life devoted to a stern preaching of repentance, and heralding of the coming Messiah, in the spirit and power of the old prophets of Israel, J. was thrown into prison in the palace-fortress of Machærus on the e. side of the Dead Sea; and afterward was put to death by Herod at the request of his wife, Herodias, conveyed through her daughter. John had incurred the woman's hate, by denouncing her unlawful marriage to Herod. J.'s followers existed as a separate body till long after the spread of Christianity, and a sect still exists in the East professing to be his disciples. See **CHRISTIANS OF ST. JOHN**. J. the B. was, from an early date, regarded in England as the patron saint of the common people, and on this account, apparently, great masonic festivals are held on St. John's Day, the day dedicated to him, June 24.

JOHN, THE EPISTLES OF: three canonical books of the New Testament. The genuineness of I John is established by an abundance of very ancient testimony against which,

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as Oelshausen says, nothing can be affected by modern conjectures. Addressed to no particular church or region, it is commonly regarded as a general letter to the churches of Asia Minor among which John spent his later years.

Some conspicuous points of the revelation from Christ which the epistle contains, are the following: 1. Concerning God: that in holiness, truth, and love, He is best represented by Light in its purity, glory, and diffusion. 2. Concerning mankind: that they are ungodly, walking in moral darkness, and under the influence and works of the evil one. 3. Concerning the redemption which the love of God has provided through his son: that Christ became the propitiation for the sins of the world; that they who (believing in him) confess and renounce their sins, obtain as a free gift forgiveness and eternal life; that the old commandments of the moral law are accepted by them in the spirit of a new obedience as the perfect rule of life; that the new commandment to love their fellow men takes possession of their souls; that they are instructed by the Holy Spirit to distinguish truth from error and holiness from sin; that, cherishing hope in Christ, they are impelled to purify themselves even as he is pure; that all who thus attest their faith are adopted as the children of God, and that this relationship is already an established reality, though its results cannot be fully developed until the glory of Christ is manifested, when the children of God will see Christ as he is; and will themselves be like him. At the beginning of the epistle, the apostle reiterates the testimony of those who had been eye-witnesses of the manifested glory of Christ as the Son of God. But besides this, he declares that there are three perpetual witnesses to the Divine nature and mission of Christ—‘the Spirit, the water, and the blood.’ 1. The Holy Spirit bears witness to Christ, in the Scriptures, in the progress of the Christian faith, and in living Christians. 2. The baptism of Jesus, consecrating him—and presenting also the Holy Spirit as a witness in visible form—testifies to Christ. 3. The blood of Christ shed in his death for the world, which death was glorified by his resurrection and ascension to the right hand of God, presented the crowning testimony of the Holy Spirit to His mission as the Son of God.

The second and third epistles, John II. and III., are well attested as genuine by external testimony; and in style, diction, and doctrine are harmonious with the first. While John I. addresses Christians in general, John II. and III. speak primarily to individuals: John II. to a Christian woman, gracious and beloved, whose name perhaps was Cyria, and whose children the apostle joyfully commends; John III. to a Christian man, named Gaius, eminent for faith, uprightness, hospitality, and love.

JOHN, THE GOSPEL ACCORDING TO: one of the canonical books of the New Testament; generally believed to have been written near the close of the 1st c.; at once widely diffused and universally cherished by Christian churches throughout the Roman Empire, as the genuine work of the apostle John. See JOHN, the Apostle. Some

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of the chief points of the abundant ancient testimony by which its genuineness is established are the following:

I. At the Council of Nice, 325, composed of eminent representative men from Christian churches east and west, this gospel was accepted as of standard authority and as universally acknowledged by the churches. In this judgment both the Orthodox Christians and the Arians were united. And as in the debate between them, relating to the proper divine nature of Christ, this gospel was fundamentally important to them both, if both had not been convinced of its genuineness, one of them would have disavowed, or at least disparaged, its authority. Therefore this council is, incidently, a great witness to the fact that in the early part of the 4th c., when Christianity had just been established as the religion of the empire, the gospel of John was universally acknowledged and used in the churches as his genuine work.

II. Origen's testimony covers a period nearly a century earlier than the Council of Nice. Born 184, and living until 253, he became eminent as a student and teacher of the Scriptures, having scholars from all parts of the empire, travelling also extensively in acquiring and imparting knowledge. Thus fully acquainted with the opinions and practice of Christians, within the first quarter of the 3d c. he affirms that 'the four gospels (see GOSPELS, THE), the last of which is John's, are the only undisputed ones in the whole church of God throughout the world.' III. The similar testimony of Clement of Alexandria dates probably about 25 years earlier. He too was a celebrated Christian teacher and travelled in Egypt, Italy, Greece, and Asia. Speaking of the four gospels, he says, 'John's was written last.' IV. Tertullian, living about the same time as Clement and eminent among Latin Christians, declares, 'among all the churches that were united in Christian fellowship the gospel of John had been received from its first publication.' V. Irenæus, probably about 30 years earlier, says, 'John's gospel—the last of the four—was published at Ephesus.' VI. The Syriac version of the New Testament, made not later than the early part of the 2d c., contains the gospel of John, which consequently must have existed and been acknowledged before that time. VII. Justin Martyr, about 140, in his defense of Christianity presented to the emperor and senate, speaks of 'memoirs made by the apostles which are named gospels and are read on the day called Sunday in the assemblies of Christians.' That one of these was the gospel of John is shown by Justin's quotations from it and allusions to it. (1.) He speaks of Christ as 'the Logos who was made flesh and through whom God created all things.' (2.) He gives John the Baptist's confession, 'I am not the Christ but am the voice of a crier.' (3.) He quotes Christ as saying, 'Except ye be born again ye shall not enter the kingdom of heaven;' and adds the objection of Nicodemus concerning the impossibility of being born a second time. (4.) He declares that 'Christ healed those who had been blind from their birth.'

VIII. In the first quarter of the 2d c., the Gnostics, a

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very numerous sect whose conception of Christianity was distorted by the Oriental philosophy in which they had been trained, acknowledged John's gospel; and endeavored, by forced interpretations of its meaning, to defend by it their peculiar doctrines. This proves that at that time, about a quarter of a century after John's death, the authority of his gospel could not be disputed. IX. Before this time, from the beginning of Christianity, John's oral preaching and teaching had been widely spread abroad and were well known. In the midst of this knowledge the written gospel appeared, and, with a swiftness which for that time is amazing, copies of it were multiplied, circulated, and cherished by all the churches. The design of John's gospel, as declared by himself, is that the readers of it 'may believe that Jesus is the Christ the Son of God; and that, believing, they may have life in his name.' Among the great things set forth in it to be believed are the following: That the Logos existed in the beginning with God and as God; that through him all things were created; that he became man upon the earth, dwelling among men full of grace and truth, and manifesting his glory to chosen witnesses, of whom the writer of the gospel was one; that Jesus is the Messiah, the sacrifice for Sin, and the Son of God; that regeneration is needed by all men in order to enter the kingdom of heaven; that the death of Christ was divinely appointed; that the love of God to the world has been supremely exhibited in the gift of His Son; that spiritual worship is acceptable to God everywhere and from all men; that Christ has power to raise the dead and to judge the world; that he is the light of the world and the giver of eternal life; that the Spirit of God sent in Christ's name is the advocate and guide of men, convincing them of sin and testifying to them of Christ; and that all who believe become the children of God, one with Christ and, in him, one with God. In the other gospels, while there are many gleams of divine glory irradiating the humiliation of Christ on the earth, there is one scene, on the high mountain apart, in which that glory transfigures his raiment, form, countenance, and condition. But in the gospel of John his whole incarnate life, death, and resurrection shine transfigured. As the presence of the book in the churches through all the centuries attests supremely its genuineness, so the glory of the being, character, and life of Christ, diffused through it, attests his divine nature.

JOHN THE PAR'RICIDE (commonly called JOHN OF SWABIA): b. 1289; son of Rudolf II., and grandson of Rudolf I. of Austria. On attaining his majority, he applied to his uncle, Albert I. of Austria, to resign to him the whole or a part of his patrimony, which consisted of Kyburg and some estates in Swabia; but Albert refused. After many abortive attempts to gain his end, J. formed a conspiracy with others who had cause to complain of Albert's rapacity, and determined to assassinate the emperor; and seizing the opportunity when Albert was riding alone, on the bank of the Reuss, near the castle of Hapsburg,

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they attacked and murdered him, 1308, May 1. The conspirators fled in different directions, J. betaking himself to Italy, where he led a wandering life and died in obscurity.

JOHN C. GREEN SCHOOL OF SCIENCE: see PRINCETON COLLEGE.

JOHNNY-CAKE, n. *jŏn' nĭ* [a familiar application of the dimin. of the personal name *John* (see JACK)]: a cake of Indian meal quickly prepared at a common fire.

JOHN OF AUSTRIA, or DON JUAN D'AUSTRIA: 1545, Feb. 24—1578, Oct. 1; b. Regensburg; natural son of Emperor Charles V. It is uncertain who his mother was. He was early brought to Spain; and after the death of his father he was acknowledged by his half-brother, Philip II.; honors and an annual allowance were bestowed upon him, and he was educated with the Prince of Parma and the Infant Don Carlos. He was intended for the priesthood; but his own inclination was for military employment, and 1570 he received the command of an army sent against the rebellious Moors in Granada, whom he completely rooted out of the country—signalizing himself at once by valor and by cruelty. In 1571, he was appointed to command a maritime expedition—in which the forces of Spain, the pope, and Venice were united against the Turks—and defeated the Turks in a great battle near Lepanto (Oct. 7). Discord breaking out among the allies, Don J. separated himself from the rest, took Tunis, and conceived the design of forming a kingdom for himself in n. Africa. But Philip, jealous of this design, sent him to Milan, to observe the Genoese; and afterward, 1576, as viceroy to the Netherlands. In this capacity, he sought to win the favor of the people by mildness; but being left unsupported by Philip, he was hard pressed for a time, till the arrival of the Prince of Parma with troops enabled him to restore the fortunes of Spain by the victory of Gemblours over William the Silent, 1577. But Philip was now apprehensive that Don J. might make himself king of the Netherlands; and the untimely death of the latter in his intrenched camp at Namur was not without suspicion of poison.—See Dusmenil's *Histoire*, and Havemann's *Leben* (Gotha, 1865) of John; and Sir W. Stirling-Maxwell's magnificent work on John (new ed., 2 vols., 1883).

JOHN O' GROAT'S HOUSE (probably more correctly JOHNNY GROAT'S HOUSE): on Duncansby Head, n.e. extremity of the mainland of Scotland, has been long known as marking one of the limits of that country. (So Burns: 'Frae Maidenkirke to Johnny Groat's.') It stood on the beach at the mouth of the Pentland Firth, and was probably built for the reception of travellers crossing the ferry to the Orkneys. Tradition gives a more romantic origin. In the reign of King James IV. (1488–1513), three brothers—Malcolm, Gavin, and John Groot or Grot—supposed to be Hollanders, settling in Caithness, acquired the lands of Warse and Duncansby. When their descendants had so multiplied that they were eight families, disputes arose as to precedence at a yearly festival which they were wont to keep.

JOHN SCOTUS—JOHNS HOPKINS UNIVERSITY.

John Groat settled the controversy by building an eight-sided house, with a door and a window in each side, and an eight-sided table within, so that the head of each of the eight families of Groats might enter by his own door, and sit at his own head of the table. Whatever credit may be due to this legend, there can be no doubt as to the existence of John Grot. In 1496, 'John Grot, son of Hugh Grot,' had a grant of a penny-land in Dungansby from William, Earl of Caithness. In 1525, 'John Grot in Dongasby,' as his name is written, chamberlain and bailie of John, Earl of Caithness, gave seisin to the Trinity Friars of Aberdeen, of a yearly payment from the island of Stroma, in the Pentland Firth. He died soon afterward, and was succeeded by his son William, or his grandson John. In 1540, there was a payment from the Scottish treasury of £20 'to John Grote, for freight of his ship sent by the queen's grace, from St. Andrews to Orkney, to the king's grace with writings.' In 1547, John Grot had a pardon from Queen Mary for helping the Earl of Caithness to storm the Earl Marischal's castle of Akirgill. About 1741, Malcolm Groat sold his lands in Dungansby, with the ferry-house, to William Sinclair of Freswick. The family of Groat still exists; but a small green knoll is all that now remains of John o' Groat's House. The shell *Cypræa Europæa*, which abounds in the neighborhood, has received the name of 'John o' Groat's bucky.'

JOHN SCO'TUS: see ERIGENA, JOHANNES SCOTUS.

JOHNS HOPKINS UNIVERSITY: at Baltimore; founded by Johns Hopkins (q.v.) with his Clifton estate and \$3,500,000, chartered by the state of Md. with power to confer degrees, and opened under the presidency of Daniel C. Gilman. LL.D., 1876, Oct. The grounds comprise about 300 acres now within the city limits, and contain an administration building with recitation rooms, a public hall, library with more than 38,000 bound vols., gymnasium, chemical laboratory, biological laboratory, physical laboratory, and accessory rooms for collegiate and univ. purposes. The founder of the univ. gave an endowment also of \$4,500,000 for a large hospital to be connected with the univ. and to be free to all classes of patients excepting contagious cases. This was opened 1889, May 7. (For plans, see HOSPITALS). Free scholarships are open to deserving youth in Md., Va., N. C., and D. C.; there is a liberal scheme of free tuition; and there are 20 fellowships yielding \$500 annually each. Instruction is provided for two classes of students; (1) undergraduates and other candidates for the degree of B.A.; (2) first degree students desirous of pursuing advanced courses which may give them the degree of PH. D. It comprises Greek, Latin, Sanskrit, Semitic, Teutonic, and Romanic languages; history, political science, philosophy, and pedagogics, mathematics, astronomy, physics, physiology, chemistry, mineralogy, pathology, and morphology; and, since the opening of Johns Hopkins Hospital, medicine and surgery. The several laboratories contain a large and costly collection of scientific apparatus, adapted both to instruction and

JOHNS HOPKINS UNIVERSITY.

original investigation. In 1902-3 the univ. had 144 instructors; 694 students; 87 scholarships; grounds, building, and apparatus worth \$1,211,211; productive funds \$4,400,000; income therefrom \$179,192; receipts from tuition fees in previous year \$37,820; total receipts \$258,083; benefactions \$1,041,235. Graduates since org. 1,422. In the early part of 1889 a rumor gained circulation that the univ. had become seriously embarrassed by the loss of \$175,000 per annum from non-payment of dividends on the Baltimore and Ohio railroad stock, which constituted a large part of the endowment fund. Fearing that the usefulness of the institution might become impaired if not wholly checked by a lack of funds, its friends subscribed \$108,000 to be expended as an emergency fund during the three following years; a lectureship in literature was endowed by a gift of \$20,000; Eugene Levering of Baltimore began the erection of a new building (Y.M.C.A.) for it; John W. McCoy bequeathed it his rare library of 8,000 vols. and made it the residuary legatee of his estate, estimated at more than \$100,000; and altogether nearly \$300,000 were received from various sources, and promises of much more during the summer. Under these encouraging circumstances the univ. opened its new year 1889, Oct. 1, with unimpaired efficiency. There were (1894-5) 566 students from all parts of the country, Europe, and Japan, and a faculty of 86 instructors. In 1896 there were in the university 106 instructors, 596 students. There were, in the year 1896, 77,000 volumes in the library. Every new student is required to pass a physical examination, and has the choice of seven distinct courses in order to reach his degree. A large amount of literary work is done annually in the univ., including the publication of the following serials; *American Journal of Mathematics* (quarterly); *American Chemical Journal* (bi-monthly); *American Journal of Philology* (quarterly); *Studies from the Biological Laboratory*; *Studies in Historical and Political Science* (monthly); and *Johns Hopkins University Circulars*. The faculty included (1889) these distinguished names in educational work: Daniel C. Gilman, President; Basil L. Gildersleeve, Professor of Greek; Paul Haupt, Professor of Semitic Languages; H. Newell Martin, Professor of Biology and Director of the Biological Laboratory; Simon Newcomb, Professor of Mathematics and Astronomy; William Osler, Professor of the Principles and Practice of Medicine; Ira Remsen, Professor of Chemistry and Director of the Chemical Laboratory; Henry A. Rowland, Professor of Physics and Director of the Physical Laboratory; J. J. Sylvester, Professor Emeritus of Mathematics, now Savilian Professor of Geometry at the University of Oxford; William H. Welch, Professor of Pathology; John S. Billings, Lecturer on Municipal Hygiene; Dr. William K. Brooks, Associate Professor of Animal Morphology and Director of the Chesapeake Zoological Laboratory; Herbert B. Adams, Associate Professor of History; Maurice Bloomfield, Associate Professor of Sanskrit and Comparative Philology; etc. Pres. 1903, Ira Remsen, LL.D.

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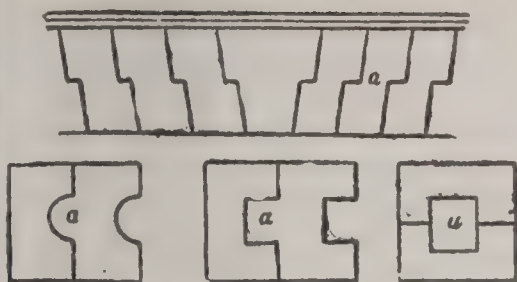
JOHN'SON, ALVIN JEWETT: 1827, Sep. 28—1884, Apr. 22; b. Wallingford, Vt.: publisher. He was brought up on a farm, acquired a fair education, taught school some time in Va., and settling in New York 1853 became agent for C. C. Colton's *Atlas*. He afterward bought the plates, revised the entire work, and published it as *Johnson's Illustrated Atlas*. His success with this led him to publish a family and physical geography, *Facts for Farmers*, an *Analysis of the Bible*, and his chief work, *Johnson's Universal Cyclopædia*, with Pres. F. A. P. Barnard of Columbia College as editor-in-chief, Prof. Arnold Guyot as advisory editor-in-chief, and numerous scholars of distinction as associate editors in special departments.

JOHN'SON, ANDREW, LL.D.: 17th pres. of the United States: 1808, Dec. 29—1875, July 31; b. Raleigh, N. C.; son of Jacob J., porter in the N. C. state bank. His father, dying 1812, left his widow too poor to give Andrew any schooling. He was apprenticed to a tailor when 10 years old, was stimulated to learn to read by hearing one of his master's customers declaim from *The American Speaker* portions of the parliamentary speeches of Pitt and Fox, was taught the alphabet by a fellow-apprentice, and applied all his leisure to reading whatever books he could obtain. Shortly before completing his apprenticeship, a boyish misconduct caused him to run away from Raleigh, and, walking to Laurens Court House, S. C., he worked there as a journeyman tailor from the summer of 1824 till 1826, May. He then returned to Raleigh, apologized to his master, offered to work out his unexpired time or pay for it, and, being unable to make any satisfactory arrangement, took his dependent mother and removed by wagon to Greenville, Tenn. He spent a part of 1826-7 searching for a place to establish himself in the tailoring business, married Eliza McArdle 1826, May 27, and finally concluded to remain in Greenville. His wife was the only daughter of a widow, and had received a good education for the time and place. From the marriage till her husband's death she proved a noble helpmate and companion. He had learned to read before going to Greenville, but that was all. As soon as they were married, the wife undertook the education of her husband. She first taught him to write, then started him in arithmetic and led him to its higher branches, encouraged his ambition for historical study, and drilled him in extempore speaking. He worked at tailoring in the daytime and studied at night. His shop became the rendezvous of the workingmen of the locality, and within two years J. had gained such influence over them and had spoken so effectively against the attempts of the moneyed elements to control public affairs, that a workingmen's party was formed, and by it he was elected alderman by a large majority 1828. He was re-elected, and at the expiration of his second term was elected mayor, to which office also he was re-elected. By this time he had become a power in local politics, and having practiced public speaking while a member of a Greenville College debating society, began taking an active interest in state

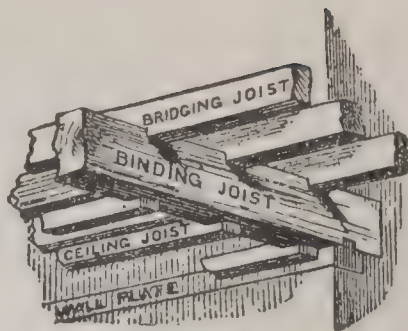
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affairs. Soon after his induction into the mayor's office, his fame was largely extended by being selected by the court as a trustee of Rhea Academy. In 1834 his aggressive leadership took a wider range. He advocated the adoption of a new state convention, which among other desired reforms should contain provisions that would abridge the influence of the large landholders and capitalists, and to his efforts was largely due the constitution of 1834-5. In the latter year, after a spirited personal canvas of his district, he was elected a member of the legislature as a democrat. At the ensuing session he bitterly opposed a bill for expending \$4,000,000 on new roads and other internal improvements; but the bill passed and for a time was so popular that his opposition to it cost him his seat when a candidate for re-election 1837. With the subsequent discovery of frauds against the state and the abandonment of the work, the people again rallied round him and returned him to the legislature 1839. In the mean time he had taken hold of national politics. He supported Hugh L. White for the presidency 1836, was a strong partisan of John Bell in his controversy with James K. Polk, and declined to join the whig party. In the presidential canvass 1840, he was a candidate for presidential elector-at-large on the Van Buren ticket, and spoke in every part of the state. In 1841 he was elected a state senator. During his single term in the senate he distinguished himself by three acts: advocating a change of the basis of representation so that it should rest on white votes exclusively; aiding in preventing the election of a whig U. S. senator by refusing to participate in a joint session; and introducing a safe measure for some internal improvements that were needed in the e. part of the state.

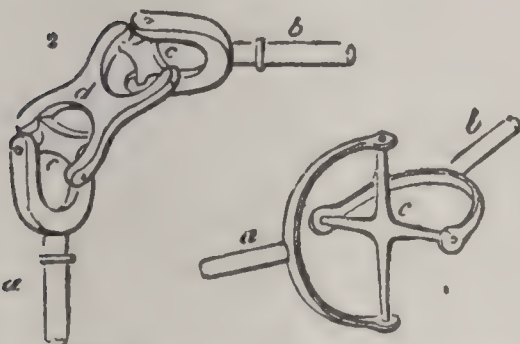
In 1843 he was elected a representative in congress, and was re-elected for four successive terms. This service was characterized by his advocacy of the bill to refund with interest the fine of \$1,000 imposed on Gen. Jackson while in command of New Orleans; support of the measures for the annexation of Tex. and the settlement of the Oregon boundary dispute; defense of the Mexican war and the tariff of 1846; appeal for the adoption of a general homestead law; opposition to expenditures for specific internal improvements not possessing general interest; defeat of the proposed contingent tax on tea and coffee; and his plea in favor of the veto power. He was strongly opposed to all compromises, holding them to be surrenders of principles often vital; but as a matter of public expediency he supported the celebrated 'Omnibus Bill' (see COMPROMISE MEASURES of 1850.) In 1853 he was elected gov. of Tenn., and 1855 was re-elected after a most exciting canvass, in opposition to a combination of whigs and 'know nothings' and in spite of repeated threats of assassination. On several occasions he appeared before hissing mobs with pistol in hand, called attention to the threats of personal violence made against him, invited anyone who had come to the meeting for the purpose of assassinating him to do it at once. and, on hearing no response



a, a, Joggle-joints; u, The last Joggle.



Joists.



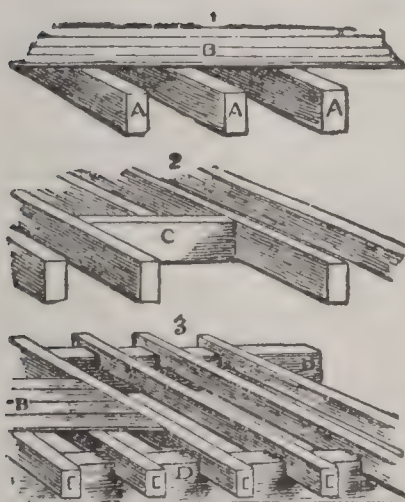
Universal Joints (single and double).



Johannes.

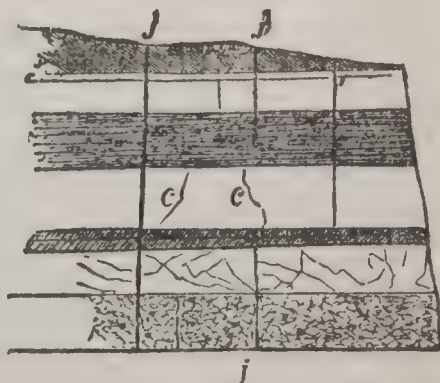


Jonquil (*Narcissus Jonquilla*.)



Joists.

1, A, A, Joists; B, Floor boards. 2, C, Trimming joists. 3, D, D, Binding joists; E, E, Bridging joists; B, Floor boards.



j, j, Joints; c, c, Cracks.

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put his pistol in his pocket and proceeded to deliver his speech. The fearlessness of the 'mechanic governor,' his grasp of public affairs, his keenness as a politician, and his unquestionable honesty, won for him many friends and made his opponents fear him. At the close of his second term as gov. he was elected U. S. senator and took his seat 1857, Dec. 7. He at once became a conspicuous member of the senate. He renewed his advocacy of a general homestead law (which was adopted by both branches of congress and vetoed by Pres. Buchanan 1860), opposed federal aid in the construction of the Pacific railroad, introduced and vigorously supported a bill providing for retrenchment in govt. expenses, urged the defeat of Jefferson Davis's bill for increasing the standing army on account of the Utah troubles, and, while acting with the democrats on general party measures, insisted that whatever might become of the question of slavery the institution should never be allowed to endanger the Union. In 1860 he was the presidential candidate of the Tenn. delegation in the Charleston-Baltimore democratic convention. In the ensuing canvass he actively supported Breckinridge and Lane, the candidates of the pro-slavery branch of his party. By the time congress met, 1860, Dec., he had been convinced that this branch of the party had determined to attempt the dissolution of the Union. He was both surprised and amazed at the situation, but did not falter an instant in what he conceived his duty. On Dec. 13 he introduced a joint resolution to amend the constitution so that the pres. and vice-pres. should be elected by district votes and U. S. senators by direct popular vote, that the terms of federal judges should be limited to 12 years, and that these judges should be chosen equally from the slave and free states. This resolution came before the senate Dec. 18, and rising in his seat, a Southerner, a democrat, and a slave-owner combined, he made his celebrated attack on those who were plotting the destruction of the Union, and announced his unalterable determination to support the federal govt. at all hazards. He spoke again on the resolution on the following day, reiterated his Union sentiments, and set forth eloquently the supreme folly and injustice of the proposed secession. His attitude at this time caused him to be most bitterly assailed throughout the s. states. In his own state he was denounced with the utmost virulence; and though the people had defeated a proposed call for a convention to decide the future action of the state, the feeling was so strong against him that the legislature itself voted the state out of the Union. In 1861, May, he returned to Tenn. While passing through Liberty, Va., a mob entered his car with the intention of hanging him, but the leaders were overawed by his great coolness and his pistols. He was hooted and hissed at other places, and when he reached his home he learned that the people of nearly every city in the state were burning effigies of him. He was the most conspicuous figure at the conventions of the loyalists of e. Tenn. May 30 and June 19, and there emphasized his position as a Unionist by demanding a vigorous prosecution

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of the war. During the winter 1861-2 his wife and child were turned out of their home and his slaves confiscated by the secession authorities of the state. A large number of Unionists were treated similarly, and all who could sought refuge in Ky. Whenever his official duties permitted, he visited the refugees and supplied their necessities with his own money, and caused the govt. to establish Camp Dick Robinson for their shelter and protection. His refuge camp was the recruiting-ground of many companies of Union soldiers.

1862, Mar. 4, Pres. Lincoln appointed him military gov. of Tenn. with the rank of brig.gen. in the army, and resigning his seat in the senate he reached Nashville Mar. 12, and at once proceeded to organize a provisional govt. His proclamations and speeches during the two following years attest the difficulty of his position, the effectiveness of his administration, and the pertinacity and courage of his nature. He announced that while it might be necessary to punish intelligent and conscious treason in high places, no merely retaliatory or vindictive policy would be pursued; that whenever a Union man was arrested and maltreated by marauding bands of secessionists, five of the most prominent rebels in the neighborhood would be arrested and imprisoned; and that wherever property of loyal citizens was taken or destroyed, full remuneration should be made out of the property of rebels in the neighborhood. He removed the mayor and council of Nashville for refusing to take the oath of allegiance to the federal govt.; started and encouraged the holding of Union meetings; preserved order in Nashville when it was threatened by the Confederates under Gen. Bragg, and prevented its surrender to him; assessed the wealthiest sympathizers with secession for the relief of widows, wives, and children in Nashville of men forced into the armies 'by the unholy rebellion;' ordered all agents and tenants of 'traitors' not to pay rents till the appointment of an officer to receive them for the federal govt., and raised 25 regts. of Union troops for service in the state. In 1864, Mar., he ordered elections for state and co. officers, and within a few weeks civil govt. was restored in Tennessee.

On the assembly of the republican national convention, Baltimore 1864, June 6, and the renomination of Abraham Lincoln for pres., it was deemed expedient to nominate for vice-pres. either a conspicuous war democrat or a Southern Unionist of tried loyalty. Daniel S. Dickinson of N. Y. was mentioned as the former and J. as the latter, and J. was put in nomination as representing both classes. From the moment of his inauguration as vice-pres. he became involved in a bitter controversy with the republican majority in congress. The assassination of Pres. Lincoln made J. the chief magistrate of the nation 1865, Apr. 15. Grave concern was felt at the beginning of his administration lest the process of reconstruction should be thwarted or obstructed by a policy of vindictiveness on his part. He retained his predecessor's cabinet, and Apr. 29 issued his first proclamation, removing trade restrictions in most of the

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lately rebellious states. His proclamation conflicted with an act of congress and was afterward modified. The proclamation of general amnesty, excepting 14 specified cases of citizens, was issued May 29; the 13th amendment to the constitution became a law with his concurrence 1865, Dec. 18; provisional govts. were established in 7 of the s. states by governors of his appointment during the following summer; and the first great breach between J. and the dominant party in congress occurred 1866, Feb., when he vetoed the Freedmen's Bureau Bill. This gap was widened Mar. 29 when he vetoed the Civil Rights Bill, which was passed over his veto. The 14th amendment to the constitution was proposed, ratified, and declared in force despite his disapproval, and a second freedmen's bill was passed over his veto in July. About this time Messrs. Denison, Speed, and Harlan resigned from the cabinet, and were succeeded by Messrs. Randall, Stanbery, and Browning. The plan of reconstruction adopted by the republican majority in congress was brought forward 1866, June, and was bitterly assailed by the pres. in speeches delivered in the cities and large towns through which he passed while on the way to Chicago to lay the corner-stone of a monument to Stephen A. Douglas Aug. 28. At the next session of congress he used the veto power freely, but without avail; a bill was passed depriving him of the power to proclaim general amnesty; another took from him the command of the army; and 1867, Mar. 2, a bill embodying the congressional plan of reconstruction was passed, vetoed, and passed over his veto, and the celebrated Tenure-of-office Bill was passed over his veto. The first of the events leading directly to his impeachment occurred 1867, Aug. 12, when he removed Edwin M. Stanton, sec. of war, from his office on his refusal to resign, and appointed Gen. Grant in his stead. On the 20th he disregarded the act of Jan. previous, and proclaimed the insurrection at an end and the restoration of civil authority in all the states; and Sep. 7 proclaimed an amnesty that relieved nearly every participant in the rebellion, on the condition of taking an oath to support the constitution and laws. When congress assembled 1867, Dec., it refused to confirm Sec. Stanton's removal, whereupon Gen. Grant resigned, and Mr. Stanton resumed the war office. 1868, Feb. 21, the pres. again attempted to remove Sec. Stanton, and to replace him with Adj. Gen. Lorenzo Thomas, but the sec. refused to vacate his office, and was sustained in so doing by the senate. Three days afterward the house of representatives voted to impeach the pres. for high crimes and misdemeanors by a vote of 126 to 47, with 17 not voting; Mar. 5 the house presented to the senate 11 articles of impeachment; and Mar 23 the senate began the trial. May 16 the senate voted on the article charging him with contempt of congress and obstructing the execution of its acts, and on the 26th on that charging a violation of the Tenure-of-office Act in the removal of Sec. Stanton, and in each case the vote was 35 guilty to 19 not guilty, one vote less than the two-thirds required to convict.

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A verdict of acquittal was entered, and the senate adjourned as a court *sine die*.

In 1868, July, J. sought a renomination by the democratic national convention but was unsuccessful, and virtually closed his administration Dec. 25 by proclaiming full pardon to everybody who had engaged in the rebellion. In 1870 he was an unsuccessful candidate for U. S. senator from Tenn.; 1872 unsuccessful candidate for congressman-at-large; and 1875, Jan. was elected U. S. senator, and took his seat at the extra session of that year. With the exception of a bitter attack on Gen. Grant, his subsequent speeches, were temperate. His widow survived him 6 months.

JOHN'SON, Lady ARBELLA, or ARABELLA: daughter of Thomas, 14th earl of Lincoln, England; wife of Isaac J. (q.v.). She sailed with her husband from Yarmouth on John Winthrop's expedition to New England 1630, Apr. 7, landed at Salem June 12, and died there Aug. 30. The name of the principal ship in the squadron, *Eagle*, was changed to *Arbella* by Winthrop in her honor.

JOHN'SON, EASTMAN: painter; b. Lovell, Me., 1824, July 29. He began drawing crayon portraits when 18 years old; spent the year 1845 in Washington and made portraits of many representative men, including Daniel Webster and John Quincy Adams; had a studio in Boston 1846-49, and numbered Longfellow and his family, Emerson, Hawthorne, and Sumner among his patrons; studied painting at the Royal Acad. at Düsseldorf 1849-50, and at the Hague 1851-55; established a studio in Paris 1856; and was soon afterward obliged to return to the United States. After spending two summers among the Indians on Lake Superior and two winters in Washington, he settled permanently in New York 1858; since 1860, when he was elected an academician, he has contributed to the annual exhibitions of the National Acad. of Design. He has attained high distinction both as portrait and genre painter. His notable paintings include *The Savoyard* and *The Card-players* (painted while at the Hague); *The Old Kentucky Home*; *Milton Dictating to his Daughters*; *The Old Stage-coach*; *What the Shell Says*; *Bo-Peep*; *Old Whalers of Nantucket*; *The Drummer-boy*; *The Pension-claim Agent*, *The Kitchen at Mt. Vernon*; *Prisoners of State*; *Fiddling his Way*; *The Boyhood of Lincoln*; and *The Barefoot Boy*.

JOHN'SON, EDWARD: 1599-1672, Apr. 23; b. Herne Hill, Kent, England: legislator. He is believed to have accompanied John Winthrop's expedition to New England 1630. In 1642 he aided in establishing the town and church of Woburn, Mass., represented it in the general court 1643-71 with the exception of one year, was its recorder from 1642 till his death, and was speaker of the Mass. house of representatives 1655. He was author of *Wonder-working Providence of Zion's Saviour in New England* (London 1654), a history of the country 1628-52, reprinted with notes by the Mass. Hist. Soc. 1867.

JOHN'SON, HERRICK, D.D., LL.D.: theologian: b. near Fonda. N. Y., 1832, Sep. 21. He graduated at Hamilton

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College 1857, and at Auburn Theol. Seminary 1860; was pastor of Presb. churches in Troy, Pittsburg, Philadelphia, and Chicago; was chosen prof. of homiletics and pastoral theology in Auburn Theol. Seminary 1874, lecturer on sacred rhetoric in the Theol. Seminary of the N. W. 1880, and prof. of sacred rhetoric and pastoral theology in the latter institution 1883; and was moderator of the gen. assembly of the Presb. Church at Springfield, Ill., 1882. He is one of the board of trustees of Lake Forest Univ., and of the Presb. church board of aid for colleges; has published *Christianity's Challenge* (Chicago 1882), *Plain Talks about the Theatre* (1883), and *Revivals, their Place and Power* (1883). He received the degree D.D. from Western Reserve College 1867. He is vigorous and direct in his onslaught on various forms of public and social evil.

JOHN'SON, HERSCHEL VESPASIAN: 1812, Sep. 18—1880, Aug. 16; b. Burke co., Ga.: lawyer. He graduated at the Univ. of Ga. 1834; was admitted to the bar and began practicing at Augusta; removed to Milledgeville and was a democratic presidential elector 1844; was appointed U. S. senator to fill a vacancy 1848; elected judge of the superior court in his judicial district 1849; held the office till his election as gov. of Ga. 1853; re-elected gov. 1855; democratic candidate for vice-pres. of the United States on the ticket with Stephen A. Douglas 1860; opposed the secession of Ga. 1861; was a member of the Confederate senate 1863-4; pres. of the Ga. constitutional convention 1865; elected U. S. senator but denied a seat 1866; and re-elected judge for 8 years 1873.

JOHN'SON, ISAAC: d. 1630, Sep. 30; b. Clipsham, Rutlandshire, England: colonist. With his wife, LADY ARBELL J. (q.v.), he accompanied John Winthrop on his expedition to New England, landing at Salem 1630, June 12. In the following month he aided in establishing the first church at Charlestown, and on Sep. 7 he removed with the colonists to Shawmut, now Boston, on account of an inadequate supply of good water in Charlestown, and was directing its settlement when he died.

JOHN'SON, OLIVER: 1809, Dec. 27—1889, Dec. 11; b. Peacham, Vt.: editor. He was apprenticed to a printer in the office of the *Montpelier Watchman*; and 1831, Jan. 1, became editor of the newly-established *Christian Soldier*. From this time till 1865 he was among the foremost workers in the anti-slavery cause, and as editor, newspaper contributor, and lecturer rendered effective service. In 1865-70 he was managing editor of *The Independent*, 1870-72 editor of the weekly edition of the *New York Tribune*, and 1872 office editor of *The Christian Union*. He was a founder of the New England Anti-Slavery Soc., published *William Lloyd Garrison and his Times, or Sketches of the Anti-Slavery Movement in America* (Boston 1880), and has since been a frequent contributor to the *New York Tribune* and other publications. At the time of writing he was reported dead.

JOHN'SON, REVERDY: 1796. May 21—1876, Feb. 9; b.

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Annapolis, Md.: lawyer. He received a collegiate education; was admitted to the bar 1815; appointed dep. attor.-gen. of the state; removed to Baltimore 1817; elected state senator 1821 and 25; resigned to attend to his practice 1827; reported the decisions of the Md. court of appeals in conjunction with Thomas Harris 1820-27; elected U. S. senator 1845; resigned to become U. S. attor.-gen. in Pres. Taylor's cabinet 1849; resumed law practice on Pres. Fillmore's accession; member of the peace convention at Washington 1861; elected U. S. senator 1862 and served with distinction 1863-68; appointed by Pres. Johnson U. S. minister to England 1868, June; negotiated the Johnson-Clarendon treaty for the settlement of the *Alabama* claims, which was rejected by the U. S. senate; recalled and resumed practice 1869; supported Horace Greeley for pres. 1872; and continued in active practice till his death.

JOHN'SON, RICHARD MENTOR: 1781, Oct. 17—1850, Nov. 19; b. Bryant's Station, Ky.: lawyer. He was educated at Transylvania Univ., Ky.; was admitted to the bar and began practicing at Great Crossings, Ky.; was elected a member of the legislature 1804, and a representative in congress as a 'republican' 1807; served in the latter body till 1819, Mar. 3, excepting two brief periods when he was in command of a regt. of Ky. mounted riflemen in the early part of the war of 1812; was U. S. senator 1819-29 and representative 1829-37; was candidate for vice-pres. of the United States on the ticket with Martin Van Buren 1836, and received 147 electoral votes, and on the election being thrown into the U. S. senate was there chosen vice pres. 1837, Mar.; and after retiring from this office was again elected a member of the legislature. He was author of the law abolishing imprisonment for debt in Ky. In the battle of the Thames, 1813, in which J. was badly wounded, he was reported to have killed the great chief Tecumseh.

JOHN'SON, RICHARD W.: soldier: b. Smithland, Ky., 1827, Feb. 7. He graduated at the U. S. Milit. Acad. 1849; served in the inf. till 1855; was transferred to the cav. as 1st lieut.; promoted capt. 1857, maj. 1862; appointed brig.gen. of vols. 1861, Oct.; served at Pittsburg Landing, Tenn., in Ala., Tenn., and Ky., the siege of Corinth, and in command of a div. of inf. at Stone River, Liberty Gap, Chickamauga, Missionary Ridge, and the battles on the line of march from Nashville to New Hope Church, Ga.; was taken prisoner at Gallatin, Tenn., 1862, Aug. 21, and exchanged Dec.; commanded the 12th div. Army of the Cumberland; was wounded near Atlanta 1864, May 28; commanded a div. of cav. at the battle of Nashville; was brevetted brig.gen. and maj.gen. U.S.A. 1865, Mar. 13; and retired 1867, Oct. 12. In 1868-9 he was milit. prof. in the Univ. of Mo., 1869-70 in the Univ. of Minn., and 1881 was democratic nominee for gov. of Minn. He published *Life of Gen. George H. Thomas* (1881), and *A Soldier's Reminiscences* (1886).

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JOHN'SON, SAMUEL, D.D.: 1696, Oct. 14—1772, Jan. 6; b. Guilford, Conn.: educator. He graduated at Yale College 1714; was ordained pastor of the Congl. Church at West Haven, Conn.: 1720, Mar.; went to London 1722, Nov. 5, and took orders in the Church of England; and as missionary of the Soc. for the Propagation of the Gospel in Foreign Parts at Stratford, was for many years the only Episc. clergyman in the Conn. colony. He engaged in a defense of episcopacy, had long controversies with the Revs. Jonathan Dickinson, Thomas Foxcroft, and John Graham, and became the first pres. of King's (now Columbia) College, New York, 1754, holding the office till 1763. He published a large number of theological and educational works, and received the degree D.D. from Oxford Univ. 1743.

JOHN'SON, SAMUEL, LL.D.: 1709, Sep. 18—1784, Dec. 13; b. Lichfield, England; son of Michael J., a bookseller. He received his early education in his native town, from a man named Hunter; of whom he has recorded that 'he beat me very well'—adding, 'without that I should have done nothing.' In 1728, he went to Pembroke College, Oxford, having been engaged for the two previous years in desultory reading, or in what he terms idleness. The *Short Account of Lichfield*, 1819, says that books of his binding are still extant in that city. At Oxford, J. spent probably the most unhappy period of his unhappy life. Overpowered by debts, difficulties, and religious doubts, he became a prey to the morbid melancholy of his constitution. Poverty prevented him from taking his degree. In 1731, his father died insolvent. In the same year he went to Bosworth as usher of a school. Finding the drudgery of this situation unbearable, he soon gave it up, gaining a meagre livelihood by working for booksellers in Birmingham. In 1736, he married Mrs. Porter, a widow: she brought him £800. He then started a school, which having no success, he repaired (1737) to London in the company of his celebrated pupil, David Garrick. Here he formed a connection with Cave, editor of the *Gentleman's Magazine*, to which periodical he became a contributor. In the following year he published *London*, a poem in imitation of the Third Satire of Juvenal, which was very favorably received, Pope, in particular, being warm in its praise. But for many years J. was miserably remunerated for his work, and had great difficulty in keeping the wolf of hunger from his door. Little is known respecting J.'s life from this period till he had passed 50 years of age. We may form, however, some guess of the measure of its unhappiness, when we consider the character and constitution of the man, and what was the position of the majority of men of letters at that time—for literature, 'a dark night between two sunny days'—when the day of patrician patronage was at its close, and that of public patronage had not yet dawned. After 1740, he began to 'report' (if we may be allowed to misuse this word) the parliamentary debates for Cave's *Magazine*. These 'debates' were drawn up by J. himself, after he

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had ascertained the order in which the different speakers rose, and the drift of their arguments. One can readily believe that statesmen were surprised at the splendor and pomp of their own eloquence when they saw it in print. In 1744, J. published his interesting *Life of Richard Savage*; in 1749, his best poem, *The Vanity of Human Wishes*, imitation of the Tenth Satire of Juvenal; and in 1750 commenced *The Rambler*, a periodical which he conducted two years, and the contents of which were almost wholly his own composition. In 1752, the death of J.'s wife left him almost broken-hearted. His affection for her was pathetic. She was old and querulous, and not intellectually gifted; but to procure luxuries for her he denied himself comforts and engaged in drudgery, and he valued her judgment of his writings more than that of the public. Without child or near kindred, he concentrated on her his affection. Three years after her death, his *Dictionary*, a noble piece of work, entitling its author to being considered the founder of English lexicography, appeared, after eight years of solid labor. *The Idler*, another periodical, was begun by J. 1758, and carried on for two years also; and in 1759 occurred one of the most touching episodes of his life—the writing of *Rasselas* to pay the expenses of his mother's funeral. It was written, he tells us, 'in the evenings of a week.' At last he emerged from obscurity. In 1762, a pension of £300 a year was conferred on him by Lord Bute; and in the following year occurred an event, apparently of little moment, but which has had a lasting influence upon his fame: this was his introduction to James Boswell, whose *Life of Dr. Johnson* is probably more imperishable than any of the doctor's own writings. In 1764, the famous Literary Club was instituted, and the following year began Dr. J.'s intimacy with the Thrales. In the same year appeared his edition of Shakespeare. In 1773, he visited the Highlands with Boswell. In 1781, appeared his *Lives of the Poets*, his last literary work of any importance. He was buried in Westminster Abbey, close by the grave of Garrick.

A forceful mind, a certain sage solemnity in the treatment of moral themes, a sharp eye for the observation of character as it manifests itself in society, and a great power of caustic wit, are the chief qualities noticeable in Johnson. He had little aptitude for abstract thinking, and no great vigor of imagination—hence he was neither a philosopher nor a poet; but he had good sense, a solid judgment, and a serious thoughtful nature—hence we find scattered through his numerous works a multitude of valuable remarks on books and men and manners. Dr. J.'s written style is very sonorous, inflated, and antithetic; the language is frequently grander than the thought, and sometimes turgid even to absurdity; but his conversational style, as reported by Boswell, is terse, robust, and felicitous. Indeed as a conversationist his talents were of the highest order. His weighty and pointed sentences fell from his lips in a form fit to pass instantly into print. For years he was the centre of a coterie of men of learning and

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talent who were drawn and held by the charm of his brilliant and fascinating talk. See BOSWELL, JAMES.

JOHN'SON, Sir WILLIAM: 1715–1774, July 11; b. Smith-town, Ireland: soldier. He came to America to take charge of the property of his uncle Admiral Sir. Peter Warren on the Mohawk river, N. Y., 1738; learned the language of the Mohawk Indians, and became a chief; was appointed col. of the Six Nations 1744, and commissary of N. Y. for Indian affairs 1746; made commander of the N. Y. colonial forces for the defense of the frontier 1748; became a member of the gov.'s council 1750; commissioned sole supt. of the affairs of the Six Nations and their allies, maj.gen., and commander in-chief of the provincial forces for the expedition against Crown Point 1755; defeated Baron Dieskau (q.v.) at Lake George (q.v.) 1755, Sep.; and was voted £5,000 by the British parliament and created a baronet for his victory. Subsequently he took part in the expeditions for the relief of Oswego and Fort William Henry, was at Ticonderoga and Fort Niagara, and succeeding to the command of the latter prosecuted the siege, defeated a French relief force, and compelled the surrender of the fort. He was granted by the king 100,000 acres of land n. of the Mohawk, and concluded the Indian treaty of Fort Stanwix 1768.—His son, Sir. JOHN J., 1742–1830, became a col. in the British army in America, and supt.-gen. of Indian affairs in British N. America. His milit. career was not as successful as his father's. His estate was confiscated by the N. Y. act of attainder, and he spent his last days in Canada.

JOHN'SON, WILLIAM SAMUEL, D.C.L., LL.D.: lawyer: 1727, Oct. 27–1819, Nov. 14; b. Stratford, Conn.: son of SAMUEL J. He graduated at Yale College 1744; rapidly attained prominence at the bar; was a delegate to the 'stamp-act' congress in N. Y. 1765, and drew up the remonstrances that were sent to the king; went to England as special agent of the gov.'s council 1766; lived in retirement during the revolutionary war; was member of congress 1784–87; chairman of the Conn. delegation to the convention that framed the federal constitution and of the committee that revised the first draft of it; suggested the organization of the senate as a separate body; was the first U. S. senator from Conn.; and was pres. of Columbia College 1787–1800. He received the degree D.C.L. from Oxford Univ. 1776, and LL.D. from Yale College 1788.

JOHNSONESE, n. *jŏn-son-ēz'* [from Dr. *Johnson*]: the literary style or language of Dr. Samuel Johnson; a pompous, inflated style, much affecting the use of classical words. JOHNSON'IAN, a. *-sŏ'nĭ-an*, pertaining to or resembling Dr. Johnson or his style; pompous, inflated. JOHNSON'IANISM, n. *-izm*, a word or idiom peculiar to or characteristic of Dr. Johnson; a style resembling that of Dr. Johnson.

JOHN'S, ST., or SAINT (Geographical): see ST. JOHN.

JOHNSTON, ALBERT SIDNEY: 1803, Feb. 3–1862, Apr. 6; b. Washington, Ky.: soldier. He graduated at the U. S. Milit. Acad. 1826, and was adjt. in the 2d U. S. inf. till his

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resignation 1834. In 1836 he joined the Texan army as a private, was promoted to succeed Gen. Felix Houston in chief command, was senior brig.gen. till 1838, when he became sec. of war, and in 1839 after two battles expelled the invading Indians from Texas. After the war he became a planter in Tex., and remained there till the beginning of the Mexican war, when he raised a regt. of Tex. vols. and took the field at the request of Gen. Taylor. He served till the close of the war and was recommended for promotion to brig.gen., but the pres. ignored him. In 1849 he was appointed paymaster in the army with the rank of maj., and served in that capacity till 1855, when he was promoted col. and assigned to command the 2d U. S. cavalry. In this new regt. Robert E. Lee was lieut., col., and George H. Thomas and William J. Hardee majors. In 1857 he was placed in command of the expedition fitted out to force the Mormons in Utah to respect federal authority, and accomplished his mission amid great hardships and without a collision with the Mormons. For the able discharge of this duty he was brevetted brig.-gen., and retained in command in Utah till 1860, Feb. 29, when he was ordered to command the dept. of the Pacific. Hearing of the secession of Tex. while in Cal., he resigned his commission in the army 1861, Apr. 9, travelled overland to Richmond, and Sep. 1 was appointed to the command of all the country w. of the Atlantic states and n. of the Gulf states, with the rank of maj.gen. in the Confederate army. He reached Nashville Sep. 14; occupied and fortified Bowling Green, Ky.; held the Union army in check till 1862, Jan.; had his right flank turned by the defeat of Gen. Crittenden, who against instructions had attacked the Union force under Gen. Thomas, Jan. 19; and determined to risk a general engagement on the Tenn. and Cumberland rivers. On Feb. 6 he lost Fort Henry to Gen. Grant and Flag-officer Foote, the Confederate troops retiring to Fort Donelson after the surrender. He hoped to defend Nashville at Fort Donelson, and placed Gens. Floyd, Pillow, and Buckner at the fort, while he personally took command at Nashville. Fort Donelson, however, was forced to surrender to Gen. Grant, Feb. 16 (see DONELSON, FORT). J. then concentrated his remaining force (50,000 men) at Corinth and planned to attack Grant. On Apr. 3 he began his march to Shiloh, hoping to find Grant unprepared, and the great battle began there on the 6th. The Union army was surprised, but in leading the final charge in the afternoon which crushed the Union left wing, J. received a mortal wound. Gen. Beauregard succeeded him, and the Confederate victory of the first day was turned to defeat on the second, when Grant was reinforced.

JOHNSTON, *jŏn'ston*, ALEXANDER KEITH, LL.D., F.R.S.: most distinguished name in British cartography: 1804, Dec. 28—1871, July 10; b. near Edinburgh. The elegance of design that characterizes all his productions, and which, in spite of their utilitarian aim, gives them rank as specimens of fine art, was probably developed during his apprenticeship as an engraver. His first im-

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portant work was *National Atlas* (fol.) 1843. Its merits received immediate recognition, and J. was appointed royal geographer for Scotland. Five years later, appeared his far-famed *Physical Atlas of Natural Phenomena*, (2d ed. 1856) the publication of which was the signal for a shower of honors from the geographical societies of Europe. In 1850, appeared a very useful *Dictionary of Geography*, better known as 'Johnston's Gazetteer' (5th ed. 1877); and in 1861, *Royal Atlas of Geography*, beautiful and minutely accurate. In conjunction with other savants, he published also atlases of Astronomy and Geology; besides many educational atlases, physical, general, and classical. In 1865, Edinburgh Univ. conferred on him the degree LL.D.

JOHN'STON, JAMES F. W.: 1796-1855; Sep. 18; b. Paisley: agricultural chemist. He was of humble parentage, and was mostly self-educated. In 1825, he removed to Dunham, where he opened a school, which he continued till 1830, when, having married a lady of considerable fortune, he applied himself to chemistry. He went to Stockholm, and became pupil of Berzelius. After his return from the continent, he resided in Edinburgh as chemist to the Agricultural Soc.; but later made his permanent residence at Durham. His *Catechism of Agricultural Chemistry and Geology* has gone through more than 50 editions, and has been translated into almost every European language; and his *Lectures on Agricultural Chemistry and Geology* are held in high esteem. The last of his works was his *Chemistry of Common Life*, which originally appeared in *Blackwood's Magazine*, and has gone through several editions.

JOHN'STON, JOSEPH ECCLESTON: soldier: b. Cherry Grove, Va., 1807, Feb. 3. He graduated at the U. S. Milit. Acad. 1829; entered the artillery branch of the army; was on frontier duty, in the Seminole war in Fla., and on the staff of Gen. Scott till 1837; resigned his commission to follow civil engineering 1837, but re-entered the army as 1st lieut. of topographical engineers, and was brevetted capt. for services in Fla. 1838, July 7; was on river improvement, boundary, and survey duty till 1846; took part in all the important battles of the Mexican war; was inspector-gen. of the Utah expedition 1857; and became quartermaster-gen. U. S. A. 1860. In 1861 he resigned his commission; was appointed maj.gen. of vols. in the Confederate Army of Va.; occupied Harper's Ferry; reinforced Gen. Beauregard at Manasses; took part in the battle of Bull Run; commanded the Confederate army in the Peninsular campaign; and was wounded and succeeded by Gen. Lee at Fair Oaks, 1862, May 31. On his return to service he was promoted lieut.gen., and given command of the s.w. dept.; was unsuccessful in attempts to raise the siege of Vicksburg; succeeded Bragg in command of the Army of the Tenn.; was superseded by Gen. Hood for failing to prevent the invasion of Ga.; attempted to check Gen. Sherman's advance through the Carolinas, but met with several

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defeats; and surrendered his army to Gen. Sherman at Durham Station, N. C., 1865, Apr. 26. During his military career J. was wounded 10 times in battle. He was elected representative in congress from the Richmond dist. of Va. 1877, and appointed U. S. railroad commissioner 1885. He died March 21, 1891.

JOHNSTON, SAMUEL, LL.D.: 1733, Dec. 15—1816, Aug. 18; b. Dundee, Scotland: lawyer. He accompanied his parents to N. C. in infancy; was educated for the bar; was clerk of the superior court of Chowan co., N. C., 1767–72; member of the assembly 1769; member of the first two provincial congresses and pres. of the third and fourth; chairman provincial council 1775; member of congress 1781–2; gov. of N. C. 1788–9; pres. of the convention that adopted the federal constitution; U. S. senator 1789–93; and judge of the supreme court 1800–03.

JOHNSTONE, *jŏnz'ton*: manufacturing town of Scotland, county of Renfrew, founded 1781; on the Black Cart, about three m. w. of Paisley. It contains several cotton factories, a flax-mill, brass and iron foundries, and machine-shops. Pop. (1881) 9,267.

JOHNSTONITE, n. *jŏn'stŏn'īt* [after Professor *Johnston* of Durham]: a mineral, a finely granular galena, mixed w' th more or less free sulphur.

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JOHNSTOWN: city, cap. of Fulton co., N. Y.; on Cayadutta Creek and the Fonda J. and Gloversville railroad; 4 m. n. of Fonda, 40 m. n.w. of Albany. It contains the manufacturing village of Gloversville, numerous kid glove and mitten factories and skin and leather dressing establishments, 10 churches, an acad., union school, gas works, electric light plant, 2 state banks (cap. \$225,000), and several hotels and newspapers. A number of lives were lost and much property damaged 1889, July 9-10 by a flood caused by the breaking of a dam. Pop. (1870) 3,282; (1880) 5,013; (1890) 7,768; (1900) 10,130.

JOHNSTOWN: city in Cambria co., Penn.; on Conemaugh river at the junction of Stony and Conemaugh Creeks, and the Penn. and a branch of the Baltimore and Ohio railroads; 39 m. s.w. of Altoona, 79 m. e. of Pittsburgh; almost totally destroyed with several neighboring villages by a flood caused by the breaking of a dam on S. Fork Creek 1889, May 31. The town was on the s. bank of Conemaugh Creek and the e. bank of Stony Creek, and in the fork between the two. It lay at the bottom of a beautiful valley surrounded by mountains rich in iron, bituminous coal, limestone, cement, and fire-clay, was closely built up on the flats, and had numerous dwellings on the mountain slopes. The chief industry was the manufacture of iron, wire, and Bessemer steel by the Cambria Iron and Steel company, which owned one of the most valuable plants in the country, had \$5,000,000 invested in the business, gave employment to two-thirds of the people, and owned the greater part of the dwellings. Their works were isolated and extended from Cambria City several miles toward the fatal dam. Besides these works there were a woolen mill, tannery, cement works, various mechanical works, and some minor industries. The town was laid out in broad shaded streets and avenues with pretty patches of grass and flowers, had an attractive park in its centre, 16 churches divided among the Rom. Cath., Presb., Meth. Episc., Bapt., Congl., and Lutheran denominations, a newly-erected brick high-school building, opera house, public library, an acad., Rom. Cath. convent, gas and water works, 1 national bank (cap. \$100,000), 1 savings bank, 1 private bank, and 2 daily and 4 weekly newspapers. J. was the site of the Indian village of Kickenopawling, and was settled by a German, Joseph Johns, 1791. The first iron-ore furnace was erected there 1809.

The dam that gave way held back the water of a reservoir formed by an artificial lake on S. Fork Creek, in the mountains, 564 ft. higher than J. This lake formerly supplied the w. division of the old Penn. canal, extending from it to Pittsburgh. A similar reservoir was at Hollidaysburg, e. of the summit of the Alleghanies. Between the two reservoirs was the old Portage road, one of the earliest railroads built in the state. When the Penn. railroad was extended through this region, the usefulness of the canal for through traffic was destroyed and the e. division abandoned. Subsequently the railroad company obtained a grant of the canal from the state, the Hollidaysburg

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reservoir was torn down, and its water gradually escaped into the Juniata river. The S. Fork Creek reservoir was preserved for its picturesque surroundings, the railroad company established the summer resort of Cresson near it, and the place became so popular among fishing and boating parties that a number of prominent business men, chiefly of Pittsburg, were led to organize the South Fork Fishing and Hunting Club and secure the use of the lake from the railroad company. The club then increased the size of the lake to a length of 3 m. and width of $1\frac{1}{2}$ m., by enlarging the dam till it was more than 100 ft. high, about $\frac{1}{2}$ m. long, 20 ft. thick at the top and 90 ft. at the base.

The first in the chain of busy villages and towns below the lake was S. Fork, 4 m. below the dam; 3 m. further down was the mining village of Mineral Point; 4 m. below this was the post borough of Conemaugh, with 4,000 inhabitants, 4 churches, and several iron mills; next (1 m.) was Woodvale, with 2,000 inhabitants and many tasteful residences; Cambria City adjoined it, pop. 2,500; next was J., population about 25,000; across the river was Cone-maugh Borough, a residence suburb of J., pop. 3,000, and adjoining J. was Grubtown or Kernville. Just below J. was the heavy stone bridge of the Penn. railroad, and below it were the villages of Sang Hollow, Nineveh, New Florence, Bolivar, Blairsville, Tunnelton, and Saltsburg. Altogether there were about 45,000 people living on the direct line of the flood.

For a few days prior to the catastrophe the region had been visited by heavy rains which greatly increased the body of water in the lake, and renewed the apprehension of danger that had been felt for more than a year by many inhabitants of the valley below it. Several times the dam had been reported unsafe and unable to withstand an increased pressure on it, and a number of leakages through it had been detected from time to time. As the Cambria Iron and Steel company seemed to feel no alarm at the condition of the dam, there was no general heed given either to reports or rumors. On the morning of the disaster an alarm was spread through J. that the dam was leaking worse than ever before. Some families that happened to be at home together and parts of others whose male members were away at work fled up the mountain sides. But these were few in comparison with the thousands who at the moment would not or could not seek safety in flight. Suddenly about the middle of the afternoon the piercing prolonged shriek of a steam whistle reverberated through the valley, and in a few moments its notes of alarm were stifled by the rushing of a great body of water down the valley, bearing with it a vast confused and whirling mass of timber, whole dwellings and parts of all manner of buildings, and struggling and dead men, women, children, babes in cradles and on shutters and doors, and domestic animals. As the flood wrecked village after village, it seemed to gain fresh momentum. The suddenness and awfulness of the disaster paralyzed the stoutest hearts. It was a supreme

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occasion for self-preservation; yet there were deeds of heroism and self-sacrifice performed that afternoon and early evening before which many of the acts of human courage most lauded in history appear insignificant. The fury of the waters met its first check at the stone railroad bridge, and there almost in the twinkling of an eye a mass of wreckage rose to a height of 40 ft. above the track. The day express train on the Penn. railroad was swept from its track at E. Conemaugh and submerged, with a loss of 25 passengers, and at the round-house 35 locomotives were lifted entire and deposited in a general wreck a considerable distance away. Early in the evening the debris at the bridge caught fire, and beside the dead bodies entangled in it, many living persons were burned beyond recognition.

As soon as news of the catastrophe could be telegraphed to the outer world, measures of relief were at once instituted. Gov. Beaver appointed Adj. Gen. Hastings his personal representative to take charge of the work of removing the debris, burying the dead, providing for the living, and disinfecting the locality lest an epidemic of fevers should follow; Clara Barton with a working force of the Red Cross Assoc. hastened to J. to prepare temporary quarters and relief for the survivors; govt. engineers were detailed to assist in blowing up the debris at the bridge; and subscriptions to the relief fund were started all over the country and in Europe. The Flood Relief Commission received to Sep. 14 from all sources \$2,605,144, and money continued to be received through the autumn. Of this amount \$769,382 were expended in Conemaugh valley and \$169,275 in other parts of the state, in clearing the path of the flood and providing for pressing necessities, and Sep. 14 the commission voted to distribute \$1,600,000 among the people of J. to partially compensate for losses and enable them to become again self-supporting. 1890, Jan. 16, the J. Flood Relief Commission reported total receipts \$2,982,072, disbursements \$2,683,747, balance \$218,325. The flood left, as far as known, 116 widows and 322 orphans. After careful investigation the committee reported total loss of life 2,500; 1,675 bodies were recovered and identified, 644 recovered and unidentified, 605 persons still missing, from a total of 2,280 known to have disappeared from the valley. It is not probable that an accurate statement can ever be made. A suit was begun against the S. Fork Fishing and Hunting Club, to test the club's responsibility for the disaster. Pop. (1900) 35,936.

JOHORE, *jā-hōr'*: state in the Malay Peninsula; see **NEW JOHORE**.

JOIGNY, *zhwān-yē'* (anc. *Joviniacum*): old walled town of France, dept. of Yonne, about 90 m. s.e. of Paris, noted for its red wines and extensive trade in wool. Pop. 6,500.

JOIN, *v. joyn* [F. *joindre*, to join—from L. *jungĕrĕ*, to yoke, to bind together]: to connect; to couple; to bring into close union; to unite, as in marriage; to return to duty, as to join his regiment; to be in contact, as the buildings join. **JOINING**, *imp.*: N. the part where united; a joint;

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a hinge. JOINED, pp. *joynd*. JOIN'ER, n. -*ér*, one who unites or joins; one who frames or joins timber in the construction of buildings, etc.: see under CARPENTER. JOIN'ERY, n. -*ér-ÿ*, the art or trade of the joiner; art of joining or framing together the wooden finishing of buildings, such as doors, windows, shutters, stairs, etc.: see CARPENTRY. JOIN'DER, n. -*dér*, in *OE.*, a joining.—SYN. of 'join': to combine; collide; coalesce; encounter; associate; adhere; add; link; in *OE.*, to close; clash.

JOIN'DER OF PARTIES, in Law: union of two or more persons, having a common interest or liability, in a legal proceeding; observed with material differences both in courts of equity and in courts of law; but applicable most frequently to actions growing out of contracts. The rules prevailing in courts of equity are more liberal than those in courts of law; in the law courts a failure to join the proper parties in an action may be fatal to the case in itself. In courts of equity it is generally provided that all parties materially interested in the subject of a suit should be joined however numerous; that where the parties are very numerous, a portion may appear for convenience for all of like interest or liability, that all parties having a common interest in a common contract may join; that two or more members of a corporation having a joint interest may join; that a corporation may join with its individual members to establish an exemption on their behalf; that idiots and lunatics may be joined or separate plaintiffs in suits to set aside acts done by them while under imbecility; that several infants may join in the same bill for an accounting of their joint estate; that all persons interested in the subject-matter of a suit who cannot be made plaintiffs should be made defendants; that officers and agents may be joined for purposes of discovery; and that all heirs should be joined in a bill respecting the testator's real-estate. In courts of law it is provided that on joint or several contracts all parties in interest may sue either jointly or separately, but part cannot join and leave the others to act separately; and on a joint and several contract each party may be sued separately or all together. Executors and administrators must bring action in the joint name of all; partners must all join in suing third parties in partnership transactions; tenants in common should join in an action on joint contract; and trustees must all join in bringing an action.

JOINT, n. *joynt* [F. *joint*; OF. *joint*, a joint—from *joindre*, to join: L. *junctus*, connected—from *jungĕrĕ*, to join]: the part where two or more things or divisions join; a hinge; a seam; the limb of an animal prepared by the butcher, as a *joint* of mutton; articulation or the joining of two or more bones, as elbow-joint (see JOINTS, in Anat.): knot in a plant: ADJ. shared by two or more; having an interest in the same thing, as *joint* heirs; united; acting in concert: V. to separate into joints, as meat; to form with joints, or in articulations; to fit perfectly. JOINT'ING, imp.: N. the making of a joint. JOINT'ED, pp.: ADJ. separated

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into joints; formed with joints, as the stem of a plant. **JOINT'LY**, ad. *-lī*, together; not separately. **JOINT'RESS**, *n -rēs*, in *OE.*, a woman who holds anything in jointure. **JOINT-STOCK**, a common fund or stock formed by the contributions or paid-up shares of different persons (see **JOINT-STOCK COMPANY**). **OUT OF JOINT**, slipped from the socket or groove where moving naturally; thrown into confusion or disorder. **JOINTS**, in *geol.*, the fissures or rents which divide rock-masses into blocks more or less regular—referring the direction of *joints* in stratified rocks to lines of upheaval, those which run parallel to the strike are called *strike joints*, those parallel to the dip, *dip joints*, and all others, *diagonal joints*. **JOINT-STOOL**, a stool made by inserting one part into another, and not by the mere insertion of the feet.

JOINT AND SEVERAL: legal phrase denoting the joinder of two or more persons in a transaction where as debtors of equal liability they may be sued together or separately. A J. and S. bond is one given by two or more obligors, who bind themselves jointly and severally, that is, collectively and individually, to the obligees. The latter can sue all the obligors jointly, or any one of them separately, for the whole amount, but cannot bring a joint action against a part and individual ones against the others. Where one obligor is sued and payment is awarded, the others are obliged to contribute to him their several proportions of the amount. If one pays the whole amount or more than his individual share, and part of the others are solvent and part insolvent, he can recover from the solvent ones only the share to which they would be liable if all were solvent. In courts of equity, however, the solvent ones must contribute equally to the discharge of the whole indebtedness. The usual phraseology of a J. and S. contract is 'we jointly and severally "promise or covenant,"' or the agreement may be for 'ourselves and each of us,' or for 'ourselves and every of us.' Under a J. and S. contract a release under seal given to one of the parties is a release to all; but an unsatisfied judgment against one will not prevent action against either or each of the others. A J. and S. liability also frequently arises in torts (wrongs). The rules governing J. and S. liabilities differ in courts of law and courts of equity as well as in the various states, and are regulated by statute.

JOINT-FIRE: see **SEA-GRAPE**.

JOINT OWNER, in Law: a person who is one of several owners of property. The property may be either personal or real, goods or land. One of the characteristics of this ownership is, that if one of the parties dies, his interest accrues to the others, and does not go to the deceased co-owner's heirs or representatives. Thus, if A and B are joint owners of a horse, and A dies, the horse then belongs entirely to B. So with real property, such as houses, lands, and estates. This is called the doctrine of survivorship. Sometimes in wills and deeds it is not clearly expressed whether the property was given to A and B as

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joint tenants or owners, or as tenants in common. The chief difference between these two descriptions of owners is, that if one tenant in common dies, his share does not go to the other tenants in common, but belongs to his representatives or heirs. Hence, in doubtful cases, a court of equity generally inclines to hold that a tenancy in common was meant rather than a joint tenancy, for the former is the more fair of the two kinds of ownership. In all cases, however, it is in the power of a joint owner to convert his joint tenancy into a tenancy in common, by simply executing a deed of partition or alienation if the property consist of land; or selling his share if it consist of personalty. And there is an exception as to the survivorship in the case of a firm of partners, for in that case, when one partner dies, his share does not accrue to his co-partners, but belongs to his own personal representatives: this is said to be an exception to the general rule of joint ownership, created for the benefit of trade, so that, in the case of a firm, the ownership is an ownership in common, and not joint ownership. In Scotland, the general rule is different, and joint property is there always equivalent to property held in common, unless otherwise shown in express words.

JOINTS, in Anatomy: articulation or union of any two segments of the skeleton of an animal body, through the intervention of a structure or structures of a different nature. The textures which enter into the formation of the more complex J. are bone, cartilage, fibro-cartilage, ligaments, and synovial membrane. Bone forms the fundamental part of all J.; ligament, in various modifications, is the bond of union between the bony segments; while the three remaining textures chiefly occur in those J. in which there is free motion. The J. vary in the degree of motion from almost perfect immobility to the greatest amount and extent of motion that are compatible with the maintenance of the bony segments in their proper relation with each other.

J. have been divided by anatomists into two great classes, to which the terms *Synarthrosis* and *Diarthrosis* are applied. In synarthrosis, the parts are continuous—that is to say, there is no synovial sac intervening between the bones; and the J. of this class are so very limited in their motion as to be considered by some as immovable; while in diarthrosis, the articular surface of each of the bones is covered with cartilage, and between these cartilaginous plates is a synovial sac; and mobility is the distinguishing feature of this class of joints. In describing the leading varieties of these two classes, we shall, as far as possible, avoid the barbarous terms which have been introduced into this department of anatomy.

In synarthrosis, the articulation is said to be by *suture* when the bones seem to grow somewhat into one another, and to become interlocked and dovetailed together, each bone having a jagged or serrated margin, or when there is a degree of bevelling of one bone, so that it is overlapped by the other. Both these kinds of suture at once are seen

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in the human skull, the serrated suture being well seen in the union of the two parietal bones, the bevelled suture being shown in the overlapping of the temporal bone above the side of the parietal, and a combination of the two being exhibited by the coronal suture between the frontal bone and the anterior edges of the parietal bones. In all these there is a thin ligamentous membrane interposed between the bones, which disappears as the growth of the cranium becomes completed.

When a slight amount of motion of one bone upon another is required to be combined with great strength, the contiguous surfaces of the bones are united by a thick and strong layer of fibro-cartilage, with which a little tissue is intermixed. This is an intermediate variety between the two classes of J., but approximates most to synarthrosis. As examples of this kind of joint, may be mentioned the articulation between the bodies of the vertebræ and that between the two pubic bones at what is termed the symphysis. See PELVIS.

In diarthrosis, the degree and nature of the motion are very various. There may be merely a little *gliding* motion between the ends of the bones, as, for example, in the articulations between the various bones of the carpus and tarsus: see HAND and FOOT. In these cases, the surfaces are plane, or one is slightly concave, and the other slightly convex; and the motion is limited in extent and direction by the ligaments of the joint, or by some projecting point of one of the bones. In some cases, instead of a slight concavity and convexity, one bone presents a cup-like depression, while the termination of the other assumes a hemispherical, or more or less globular shape. Hence the name of *ball and socket* applied to such joints. The best example of this variety is the hip-joint (q.v.), and the next best is the shoulder. In these J., the ball is kept in apposition with the socket by means of what is termed a *capsular* ligament, which may be described as a barrel-shaped expansion of ligamentous structure, attached by its extremities around the margin of the articular surfaces composing the joint, and forming a complete investment of it, but not so tight as materially to restrict its movements. This species of joint is capable of motions of all kinds, as any one may readily test for himself, especially in the shoulder-joint.

Another important variety of articulation is the hinge-joint, in which the contiguous surfaces are marked with elevations and depressions, which exactly fit into each other, so as to restrict motion to one direction. The elbow and ankle-J., and the J. of the fingers and toes, are the best examples of this variety. The knee-joint is a less perfect example, because in certain positions it is capable of a slight rotation. These hinge-J. are always provided with strong lateral ligaments. The shells of bivalve mollusks are united by a very strong and perfect hinge-joint.

The last kind of joint requiring notice is that which admits only of rotatory motion. A pivot and a ring are the essential parts of this joint, the ring being generally formed

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partly of bone and partly of ligament. The best example of this articulation is that between the atlas (the first vertebra) and the odontoid or tooth-like process of the axis (the second vertebra): see **HAND**.

Diseases of the Joints.—Formerly, all the severer forms of diseases of the J. were vaguely designated under the one general term *white swelling*; but, thanks to the labors of modern surgeons, especially Sir Benjamin Brodie, the diseases of the J. are well understood, and can be discriminated with considerable accuracy.

In diseases of the J., we may have one or more of the following textures affected: (1), the synovial membrane; (2), the cartilage; (3), the bones themselves.

The synovial membrane may undergo either acute or chronic inflammation, giving rise to the serious affections known as acute and chronic Synovitis (see **SYNOVIAL MEMBRANES AND FLUID**).

Loose substances of a fibrous structure, and usually resembling a small bean in size and shape, sometimes occur in joints, especially in the knee-joint. They commence as little pendulous growths upon the synovial membrane, which after a time become detached. When they get between the ends of the bones, which they are apt to do during exercise, they cause a sudden and often a most excruciating pain, often followed by inflammation, and by an arrest of all motion of the joint. These symptoms are not relieved till, by gentle flexion and manipulation, the loose cartilage (as it is usually termed) has been removed to a position in which it ceases to give annoyance. When the displacement of the loose body is only occasional, and does not cause intensely severe pain, the treatment should be limited to the application of an elastic bandage or a tightly fitting knee-cap, which should be constantly worn, with the view of restraining the loose body to a position in which it is inoffensive. If, however, this palliative treatment fails, the offending party must be removed by subcutaneous incision, which avoids the danger of a direct wound into the joint.

The cartilage may be affected in various ways. There may be (1) simple destruction of cartilage; (2), scrofulous destruction of cartilage; (3), hypertrophy of cartilage; (4), atrophy of cartilage, and other modified forms of disease of this texture, all of which, especially the second, are very serious, but not of a nature that admits of popular explanation.

The most important diseases of the osseous structures of the J. are (1) ulcer and (2) caries. These diseases often, but not always, begin with the disorganization of cartilage, and then extend to the bones. Sometimes, however, they commence in the bones. For one very important mode of treating articular caries, see **RESECTION OF JOINTS**. Several of the preceding diseases, even when the result of the treatment may be regarded as satisfactory, leave a certain amount of stiffness of the joint (sometimes extending to perfect immobility), to which the term *Anchylosis* (q.v.) is applied.

JOINT-STOCK COMPANY.

JOINT-STOCK COMPANY: association of individuals who unite to carry out a particular object of a private nature by each taking and paying for shares in the common stock. The object of the association may be to manufacture some species of article, to conduct some branch of trade or commerce, the business of banking or insurance, or in general to do whatever work of a private nature any individual can do. In many respects, the proceedings of railway, canal, and other public companies resemble those of joint-stock companies. In ordinary circumstances, the capital or stock of a joint-stock company is beyond what any single individual, however wealthy, would be able or inclined to adventure; though there may be instances, as in the case of co-operation (q. v.), where a union of small sums by a large number of persons is for peculiar reasons desirable. Joint-stock companies are comparatively modern, and they have prospect of success only in a community possessing good business notions, habits, and enterprise, with a good degree of mutual confidence. Accordingly, in Great Britain, the Netherlands, and the United States, these undertakings have had largest development. In France, this method is of more recent growth, and appears still to require the fostering care of the state.

The usual process of commencing a J. S. C. is to issue a prospectus, detailing the object of the undertaking, inviting the subscription of shares, and specifying the probable profits. As the proposed company requires a paid secretary, who is in effect to be its constructor and future *attaché*, it often occurs that in periods of ease in the money market, schemers and adventurers devise projects of this kind, and induce inexperienced capitalists to take shares; the result often being a collapse of the company, to the loss of all concerned, the projector alone excepted.

Every J. S. C. sets out on certain rules of management, which receive the approval of the shareholders, who name a chairman and board of directors, and these, on being appointed, choose subordinate officials. Whatever be the rules, and also the implied responsibilities, the practice is to allow considerable latitude to the chairman and other directors in conducting the affairs of the company, for only they are in a position to form a correct judgment on points deeply concerning the character and welfare of the association. Ordinarily, and with reckless imprudence, shareholders ask no questions, and experience no suspicions as long as they are getting satisfactory dividends—a neglect which sometimes suffers severe retribution.

Joint-stock companies are at best a clumsy and often not very satisfactory method for accomplishing a particular purpose. Conducted by directors or managers with whatever dexterity, they fall immeasurably behind as regards the energy, breadth of calculation, vigilance, and promptitude with which a business may be conducted by a single individual, or by two or three active partners, ready on the instant to take advantage of every important turn in the market. Unless, therefore, in exceptional circumstances above referred to, and in gigantic concerns which no single

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Individual or ordinary copartnery would undertake, joint-stock companies are economically inexpedient.

Where there is no limitation by statute confining the liability of stockholders to the amount of their respective stocks, any single shareholder incurs a responsibility equal to the whole debt of the concern, and he can seek relief only against his brother shareholders jointly or severally. The appalling nature of this responsibility, and the necessity for as far as possible averting it, have induced the British parliament to empower the organization of companies on a method of limited responsibility; in this respect copying a plan which has worked successfully in the United States. To participate in the benefit of this limitation, companies need to be publicly registered according to certain statutory obligations, by which means all have an opportunity of judging of their character.

The principle of limited liability was introduced 1856. The distinction between limited and unlimited companies is, that whereas, if a company of unlimited liability contract debts, every member is liable (if his co-members prove unable to pay their proportions) to pay the whole of these debts even to the last shilling of his possessions; on the other hand, if the company is limited, though it contract debts however large, yet each member can in no event be called on to pay more than he expressly guaranteed; thus he knows at the outset the worst that can befall him. Hence if a limited company contract excessive debts beyond what the members are bound to pay, it is the creditors chiefly who will suffer; but they have such ample means of satisfying themselves beforehand about the position and capabilities of the company, by reason of the publicity and access to books now provided, that they can blame only themselves if they credulously give too large credit.

Under the provisions of the Companies' Act (1862) and the amendments to it (1867, 70), any seven or more persons in Great Britain, associated for any lawful purpose, may form a J. S. C., either of limited or unlimited liability. A memorandum of association stating the name of the company, amount of capital, object of association, place of business, and character of the liability, must be drawn up, stamped, and signed by each subscriber in the presence of a witness, and, with printed articles of association (known as a deed of settlement) stating the rules of the company, be delivered to the registrar of joint-stock companies, who will register both memorandum and articles, and grant a certificate of incorporation. This procedure applies to all life, fire, and marine insurance companies, and other partnerships consisting of more than 25 members. Holders of stock elect a specified number of themselves to constitute a board of directors for the transaction of business, and this board elects and appoints the necessary officers. In Great Britain the chief executive is known as the chairman of the board of directors or trustees; but in the United States this officer is known as the pres. of the company. The Companies' Act also makes provision for the management and administration of such companies,

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their periodical inspection by official examiners, and the mode of winding them up for insolvency, fraud, or other sufficient cause.

In the United States many such companies have been formed on the basis of common-law rules; but they are now generally assigned by the statutes of the various states to a position between partnerships and corporations, and authorized to adopt many leading features of both. Unlike the Companies' Act of Great Britain, these statutes are without uniformity, each state that has taken legislative action on the subject having treated it independently of the rules of other states. In some states no associations as joint-stock companies distinct from corporations are known; in others the common-law rules prevail. In N. Y. such companies have all the attributes of a corporation, except the right to have and use a common seal, and an action is properly brought for or against the pres. or treas.; but some courts have held that a company formed under the N. Y. law is not a corporation and must be sued as a partnership. Another ruling is that an English J. S. C. must be regarded as a corporation in this country. In the Mass. statutes the application of the words J. S. C. is to companies organized under the general laws as corporations. N. Y., Mass., and Me. have very stringent statutes regulating the formation and management of such companies, and require from their officers sworn reports of their business at stated periods, the same as from insurance companies. In other states joint-stock companies are formed under general laws which permit more or less laxity in their management, and do not require sworn or other reports. The promoters or organizers file their articles of incorporation, giving names of parties, name of the company, purpose of the company, amount of capital, and location of the business, with the co. clerk, and receive from him a certificate of incorporation. Frequently these articles in stating the amount of capital will contain a special clause, like this for example: 'capital \$100,000 in shares of \$100 each, with power to increase to \$500,000,' or 'shares all paid up,' or 'company begins business with \$10,000 paid in.' A state that permits the organization of a J. S. C. by such simple means, and afterward requires no reports and makes no official investigation of the company's affairs, is sure to do a large business in this way, and at the same time afford speculators an admirable means of operating. Because of the simplicity of its general law relating to the formation of organizations not charitable or benevolent in character, and its accessibility to the business men of New York, N. J. has been a favorite place for the formation of all kinds of joint-stock companies and corporations doing business elsewhere. A local incorporator and a local office, even though used temporarily, are all that is necessary for the formation of certain kinds of companies transacting business at distant points. A Mexican railroad and construction company, and a number of Mexican and American mining companies, for example, have been formed in N. J., and the Nicaraguan canal company was incor-

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porated in N. H. In N. J. all corporations organized under the general law pay the state a fee of \$25 if the capital does not exceed \$100,000, and 20 cents for each \$1,000 additional. In recent years, W. Va. has been offering inducements for the formation of outside joint-stock companies equal to if not more liberal than New Jersey.

The following decision (10 Wall. 566) is important in this connection: 'A joint-stock company (in this case a fire-insurance company) which by its deed of settlement in England and certain acts of parliament is endowed with the faculties and powers mentioned below, is a corporation and will be so held in this country, notwithstanding the acts of parliament declaring it shall not be so held. These faculties and powers are: 1. A distinctive artificial name by which it can make contracts. 2. A statutory form to sue and be sued in the name of its officers as representing the association. 3. A statutory recognition of the association as an entity distinct from its members, by allowing them to sue and be sued by it. 4. A provision for its perpetuity by transfer of its shares, so as to secure succession of membership. Such corporations, whether organized under the laws of a state of the Union or a foreign government, may be taxed by another state for the privilege of conducting their corporate business within the latter.'

JOINT TENANCY: a legal term signifying an estate held by several persons in equal shares. They are said to hold *per my et per tout*, which means that for the purpose of survivorship each holds the whole, but that for the purpose of disposal each owns only his own share. Equality of shares is one of the incidents of a joint tenancy; if the part of the respective owners become unequal, a tenancy in common, as it is termed, is created. In a tenancy in common there is no survivorship, the estate upon the death of the holders going to their respective heirs. Under the English common law, if an estate is conveyed to several persons, without any terms as to how it should be held, it is regarded as a joint tenancy, but this rule is not favored in America, being founded upon the feudal notion of entirety of service due the lord by the vassal. In many of the United States the statutes provide that estates granted or devised to two or more persons in their own right, without qualification, shall be deemed tenancies in common, unless the intent to make them joint tenancies clearly appears. A joint tenant is not prohibited from conveying his share or interest to a stranger, but the latter would not become a joint tenant with the other co-tenant of the property; he would be a tenant in common with him. But a devise by one joint tenant, curiously enough, does not have the effect of conveying the tenant's interest. The reason for this distinction is said to be, that one takes effect during life, and the other after life. As a rule, estates given to two or more trustees are held in joint tenancy, and go to the survivor, even in the states having the statutes before mentioned. There is neither dower nor curtesy in estates held in joint tenancies. The right

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of survivorship in the co-tenant being inconsistent therewith. See JOINT OWNER: JOINDER OF PARTIES.

JOINT TRADE, or **ADVENTURE**: partnership limited as to a particular undertaking, and not, as in the usual case, for a series of years or a definite time. Hence the parties so joining have not the same liabilities as ordinary partners of a firm. Thus, a partnership of this kind may be limited to the working of a patent. In all such cases, the rights and liabilities of the parties are much less extensive than those of ordinary partnerships; but everything depends on the particulars of the contract made between them.

JOINTURE, n. *jöynt'ūr* [OF. *jointure*; F. *jointure*, a joining—from L. *junctūrā*, a joining, a joint—from L. *jungĕrē*, to join together]: in *law*, an estate or some interest for life or a longer period in an estate settled upon a wife, in the event of her surviving her husband. The J. was at first adopted as a substitute for Dower (q.v.), and dower is barred if a J. is provided. The requisites of a J. are: 1. That it must commence and take effect immediately on the husband's death; 2. It must be for the wife's life, or for some greater estate; 3. It must be given to the wife herself, not merely to trustees for her; 4. It must be expressed to be made in satisfaction of her whole dower; 5. It must be made before marriage. The mode of giving a J. is usually by way of a rent-charge on the husband's real estate, the effect of which is to allow her to remain in possession of the estate, or part of it, after the husband's death, so long as she lives. If a J. be created out of an estate before marriage, the husband cannot sell the estate afterward so as to defeat the jointure. A J. is not lost by the treason or felony of the husband, nor by the elopement and adultery of the wife. **JOINTURE**, v. to settle a jointure on. **JOINT'URING**, imp. **JOINTURED**, pp. *-ūrd*: **ADJ.** endowed with a jointure: see **JOINT**.

JOINVILLE, FRANÇOIS FERDINAND PHILIPPE LOUIS MARIE D'ORLEANS, Prince DE: b. Neuilly 1818, Aug. 14; third son of Louis Philippe, King of the French. He was educated for the naval service; became a lieut. 1836; was given command of the corvette *Creole* 1838, and greatly distinguished himself in the attack on Fort San Juan d'Ulloa and the city of Vera Cruz, leading the storming party and capturing the Mexican gen. Arista in a hand-to-hand combat, for which he was made a chevalier in the Legion of Honor and promoted capt. He commanded the frigate *La Belle Poule*, and conveyed the remains of Napoleon from St. Helena to France 1840; married the Princess Francesca de Braganza, sister of Dom Pedro II., ex-Emperor of Brazil, and was appointed rear-admiral 1843; commanded the fleet that bombarded Tangiers and seized Mogador 1844, for which he was promoted vice-admiral; and was commander of the fleet off Algiers, with his brother, the Duc d'Aumale, commanding the French milit. forces in Africa, when the revolution broke out 1848. Both brothers yielded to an apparent popular will, vacated their

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offices, and removed to England. He spent the next 13 years in travel and authorship. On the outbreak of the American civil war, he came to the United States with his son, the Duc de Penthièvre (b. 1845, Nov. 4), and his nephews, the Comte de Paris and the Duc de Chartres. His son entered the U. S. naval acad., and his nephews received commissions from the U. S. govt., and served in his company on Gen. McClellan's staff during the Va. peninsular campaign. In the early part of the Franco-German war, he vainly begged Napoleon III. (who had confiscated his French estates 1852) to permit him to serve in the defense of his country. After the revolution 1870, Sep. 4, considering their exile ended by the fall of the empire, he and the Ducs d'Aumale and de Chartres returned to France, and served in the army under assumed names till formally expelled by Gambetta's order. In 1871, the French assembly repealed the edict of exile against the Orleans princes, and the same year he and the Duc d'Aumale were elected members of the national assembly. His daughter, Françoise Marie Amélie (b. 1844, Aug. 14), married the Duc de Chartres 1863, June 11.

JOINVILLE, *joyn'vîl*, F. *zhwǎng-vêl'*, JEAN, Sieur or Sire DE: one of the earliest French historians, whose works possess much interest or value: 1224-1319, July 11; of an old family, in Champagne. He held high offices under Thibaut IV., King of Navarre. In 1248, he joined Louis IX. of France with nine knights and 700 armed men in his crusade; shared that monarch's captivity; and returning to France 1254, was frequently at his court, but declined to accompany him in his second crusade. After the death of Louis IX., the Sieur de J. wrote *Histoire de St. Louis*, one of the most valuable works in the literature of the middle ages, combining an excellence of style then very rare with an interesting exhibition of individual character in the minute record of events. It has the garrulity of old age, and deals with all manner of little affairs; but it gives the reader almost a personal acquaintance with its hero, St. Louis, as well as with its author. The *Histoire de St. Louis* was published first 1546; one in modernized French, was published by Natalie de Wailly 1873.

JOIST, n. *joyst* [OF. *giste*, a bed, a place to lie on, a home—from mid. L. *gista*, a sleeping-place—from L. *jacĕrĕ*, to lie: F. *gésir*, to lie]: one of the lighter horizontal timbers of a floor or ceiling, on which the boards or laths may be nailed (see FLOORS): V. to fit with joists. JOIST'ING, imp.: N. the smaller timbers of a floor on which the flooring is nailed. JOIST'ED, pp.

JOKE, n. *jōk* [Dut. *jok*, sport—from L. *jōcūs*; It. *gioco*, sport, game: F. *jouer*, to play]: something said in order to raise a laugh; a jest; something not in earnest; a trick: V. to be merry in words or actions; to make merry with; to jest. JO'KING, imp.: ADJ. uttering jokes: N. utterance of jokes. JOKED, pp. *jōkt*. JO'KER, n. *-kēr*, a merry fellow; a jester. JO'KINGLY, ad. *-lî*, by way of a joke; in

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a joking way. IN JOKE, not in earnest; only for the sake of raising a laugh. PRACTICAL JOKE: see under PRACTICABLE.—SYN. of 'joke, v.': to jest; sport; rally; be merry.

JOKJOKERTA, *jök-yō-kēr'tā*, or JOKYOKARTA, *jök-yō-kār'tā*, or JOKJAKARTA: former kingdom, now a Dutch province or residency of Java, about the centre of the s. coast of the island; 1,191 sq. m. Its cap. is a city of the same name; pop. 50,000. J. was one of the most important of the native states, is very fertile, yields large crops of rice, coffee, and tobacco, contains the volcano of Nerapi, 3,000 ft. high, and has a most curious and gorgeous water palace in the capital occupied by the native sultan. Pop. of province 474,519; of cap. 44,999.

JOK'TAN (Arab. *Kahtan*): son of Eber, descendant of Shem, and progenitor of various tribes in s. Arabia: see YEMEN.

JOLE. n., or JOWL, n. *jōl* [AS. *ceole*, the jaw; *ceaf*, the snout, the jaw: OF. *gole*, the mouth, the throat: Icel. *kjaptr*, the mouth, the jaw]: the face or cheek; the head of a fish. CHEEK BY JOLE, or JOWL, with the cheeks together; side by side.

JOL'IBA: see NIGER.

JOLIET, *jō'lē-ēt*: city, cap. of Will co., Ill.; on the Des Plaines river, the Ill. and Mich. canal, and the Chicago Rock Island and Pacific, Chicago and Alton, and the Mich. Central railroads; 36 m. s.w. of Chicago. It is on both sides of the river, in a rich agricultural region, and has inexhaustible quarries of blue and white building-stone and several noted coal-fields in its vicinity. Cement, gravel, and fire-clay also are found in large quantities. The industries comprise an iron and steel works that cost \$3,000,000, employing from 2,000 to 2,500 hands, and yielding largely of the products of the blast furnace, puddling-mill, foundry, and machine-shop; several flour-mills; and agricultural implement, barbed-fence wire, fire-brick, and drain-tile factories. The state penitentiary here, built of stone, cost more than \$1,000,000, has walls 35 ft. high inclosing 16½ acres, and usually contains 1,200–1,500 prisoners employed in various manufactures on contract. J. has a city hall, 12 churches, high-school and 10 grammar-schools, 2 Rom Cath. convents, public library, 16 artesian wells, paid fire dept., gas and electric lights, 3 nat. banks (cap. \$350,000), 1 state bank, 1 sav. bank and 3 daily and 5 weekly papers. Pop. (1880) 11,657; (1890) 23,264; (1900) 29,353.

JOLIET, *zhō-lē-ā'*, Louis: 1645, Sep. 21—1700; b. Quebec: explorer. He was educated in the Jesuit College, made a special study of hydrography, received minor orders in the priesthood, and graduating 1666 gave up his intention of becoming a priest, and spent several years in travelling and trade in the w. region. In 1672 he was selected by the French intendant and gov. gen., because of his familiarity with the languages of the Indians and the topography of

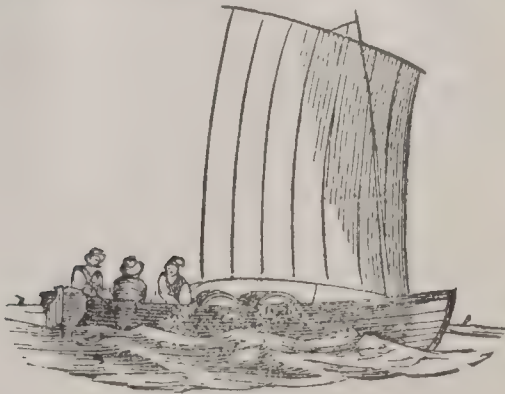
JOLL—JOLLY-BOAT.

their country, to attempt explorations of the Mississippi river, then supposed to empty into the Sea of California. Associating with him Father James Marquette (q.v.) who had had experience with Indians, and 5 other Frenchmen, he started from Michilimackinac 1673, May 17, ascended Fox river from Green Bay, proceeded thence down the Wisconsin river, entered the Mississippi river June 17, and followed it to lat. 33° 40' n., below the mouth of the Arkansas river. Satisfied that the river emptied into the Gulf of Mexico instead of the Pacific, he returned and reached Lake Michigan by the Illinois river. He lost all his papers and maps in the Lachine rapids, made new ones from memory, and was supplanted in the further work of Mississippi river exploration by Robert La Salle (q.v.). He was granted the seigneurie of Anticosti Island, appointed royal hydrographer, and 1697 obtained the seigneurie of Joliet or Joliette, s. of Quebec.

JOLL, v. *jōl*, or JOWL, v. *jowl* [see JOLT]: in *OE.*, to knock together; to dash; to beat against anything, as with the head; to clash with violence. JOLL'ING, imp. JOLLED, pp. *jōld*.

JOLLY, a. *jōl'li* [OF. *jolif*; F. *joli*; It. *giulivo*, gay, fine, merry: Icel. *jól*, or *jul*, Christmas, the great season of festivities in rude times: Dut. *joelen*, to revel, to make merry]: merry; full of life and mirth; of fine appearance; plump. JOLLITY, n. *jōl'li-ti*, or JOL'LINESS, n. *-nēs*, noisy mirth; hilarity. JOL'LILY, ad. *-li*, in a jolly manner; with noisy mirth. JOL'LIFICA'TION, n. *-f'i-kū'shūn* [L. *fāciō*, I make]: in *familiar language*, noisy festivity and merriment. JOLLIMENT, n. *jōl'li-mēnt*, in *OE.*, merriment; noisy mirth; gayety.—SYN. of 'jollity': gayety; festivity; merriment; mirth; joviality; in *OE.*, handsomeness; beauty; —of 'jolly': gay; joyous; airy; lively; jovial; cheerful; healthy; in *OE.*, handsome; well-favored.

JOLLY-BOAT, n. *jōl'li-bōt* [Dan. *jollē*, a yawl, a jolly-boat: Sw. *jullē*; Dut. *jol*, a yawl]: a small boat or yawl belonging to a ship, used for communicating with the



Jolly-Boat.

shore. It is a broad, safe boat, and is specially for the use of the steward in conveyance of his purchases from shore.

JOLT—JOMMELLI.

JOLT, *v.* *jölt* [old or prov. Eng. *julk*, to splash, to jolt; *jolle*, to knock: a word imitative of the sound of shaking and knocking]: to shake or disturb by sudden jerks; to shake with sudden risings and fallings: *N.* a sudden jerk or shock. **JOLT'ING**, *imp.*: **ADJ.** giving sudden jerks or shakes to. **JOLT'ED**, *pp.* **JOLT'ER**, *n.* one who. **JOLT'INGLY**, *ad.* *-lī*. **JOLTHEAD**, **JOLTER-HEAD**, or **JOLLED-HEAD**, *literally*, one whose head has been knocked about or against another's, or against any other object, as a punishment for stupidity or laziness; a blockhead. *Note.*—In Shakespeare we have 'may *joll* horns together' = 'may knock heads together': 'the knave *jowls* it to the ground' = 'throws it with a jerk to the ground.'

JOMINI, *zho-mē-nē'* **HENRI**, Baron: 1779, Mar. 6—1869, Mar. 22; b. Payerne, in the canton de Vaud; general in the French, and afterward in the Russian service, and writer on military tactics. He began his military career in a Swiss regt. in the French service, and chiefly through the friendship of Ney, was raised to high military rank by Napoleon. In 1804, he began the publication of *Traité des Grandes Operations Militaires*. He distinguished himself in active service during the retreat from Russia; but offended at his treatment by Napoleon, he passed over to the allies after the armistice of Plaeswitz, and entered the service of Russia, in which he became lieut. gen. and aide-de-camp to the emperor. He declined to take part in the invasion of France 1814. In 1828, he was active in the military operations at Varna; and 1855 he settled at Brussels. Besides the work already mentioned, his *Histoire Critique et Militaire des Campagnes de la Revolution* (5 vols. Paris 1806), *Vie Politique et Militaire de Napoleon* (4 vols. Par. 1827), and *Tableau Analytique des Principales Combinaisons de la Guerre* (Petersb. 1830) are of great value to the military student. His writings give the best military account of Napoleon's campaigns. Baron J. died at Paris.

JOMMELLI, *yo-mēl'lē*, **NICOLO**: 1714, Sep. 11—1774, Aug. 28; b. Naples: Italian composer. He studied music with Muzillo, Prota, Mancini, and Leonardo Leo; first composed cantatas, then applied himself to dramatic music, produced his first opera *Errore amoroso* in Naples 1737, and his first serious opera *Odoardo* 1738, and the fame achieved by these works led to his being invited to Rome 1740. There, under the patronage of Cardinal York, he composed two new operas, and 1741 went to Bologna and composed *Ezio* and studied with Padre Martini. He then made a tour of the chief cities of Italy; produced *Didone* in Rome, *Merope* for the theatre, and a *Laudate* for the church of Santo Marco in Venice, and *Eumene* in Naples; spent two years in Vienna giving instruction in music to the empress; and 1748 was recalled to Rome, where he composed *Artaserse* and the oratorio *La Passione*, and was appointed chapel-master of St. Peter's Church. He resigned this office 1754 and was chapel-master and court-composer at Stuttgart till 1772, when he returned to Naples. His last, and believed by many his greatest, work, *Miserere*, was

JONAH—JONAS.

composed after he had been paralyzed. His works comprise 40 operas, 5 cantatas, 4 oratorios, and 34 church compositions.

JONAH, *jō'na* [Heb. *Yonah*, a 'dove;' Gr. *Jonas*]: Hebrew prophet, son of Amittai; b. in Gath-hepher, a town of Galilee in Zebulun, not far from Phœnicia; lived in the last half of B.C. 8th c., in the reign of Jeroboam II.; probably, therefore, the earliest of the prophets whose writings are extant. (See II K. xiv. 25.)—The BOOK OF JONAH has always been placed by the Jews among their canonical books. Critics have much debated the question whether it is a history or an allegory. Kalisch deems it a symbolical story founded on fact. Other writers, inclining to this view, point out that Christ's use of it (see below) involves only an acceptance of it as a popular and familiar piece of symbolism, which was fitly applicable as an illustration of truth regarding himself. It has been urged by Rosenmüller and other critics, that the miracle concerning the great fish (not a whale) recorded in the book is not to be regarded as a historical fact, but as an allegory, founded on the Phœnician myth of Hercules rescuing Hesione from the sea-monster by leaping himself into its jaws, and for three days and three nights continuing to tear its entrails. The design of the author in incorporating this myth with the *actual* voyage of J., and the conversion of the heathen Ninevites was, it is suggested to bring out more vividly the truth, that God will not permit his merciful intentions to be frustrated by the disobedience even of a prophet. On the other hand, it has been thought by orthodox theologians generally, that the language of Christ (Matt. xii. 39–41; xvi. 4; Lk. xi. 29), and the manner in which it is mentioned in Josephus and the Apocrypha, show this miracle to be strictly historical.—The possible purpose of the book has been suggested to be to teach that God had regard for heathen nations as well as for the Hebrews; or to show the missionary character of the people of Israel in the Divine plan; or to exhibit prophecy as conditioned in its fulfilment on human activity. J. has been supposed by early authorities to have been the son of the widow of Sarepta (I K. xvii. 24), also to have been the pupil of Elisha. J's tomb is shown at Nebi Yunus (Prophet Jonah), near Mosul.—Leusden, *Jonas Illustratus* (Trai. 1692); Friedrichsen, *Kritischer Ueberblick der Ansichten vom Buch Jonas* (Altona 1817); Rosenmüller, *Proleg in Jonam*; Drake's *Notes* (1853); also Ewald and the more recent commentators and critics.

JONAS, *yō'nâs*, JUSTUS: 1493, June 5—1555, Oct. 9; b. Nordhausen, Saxony: theologian. He studied law, became prof. of jurisprudence at Erfurt and Wittenberg, and while in the latter city studied theology, accepted the doctrines of the Reformation, and was appointed prof. of theol. in the university. He accompanied Luther to the diet of Worms, was at the conference in Marburg and the imperial diet of Augsburg, was appointed preacher and ecclesiastical supt. at Halle 1541, and Coburg 1546, aided Luther in translating

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the Bible, and was preacher and supt. at Eislefeld at the time of his death.

JONATHAN BEN-UZZIEL, *jōn'a-than bēn ūz-zī'ēl* or *ūz'zē-ēl*: lived about B.C. 30; b. Palestine: author and translator. He was educated by Hillel (q.v.), and applied himself first to the translation of the Hebrew prophetic writings into Chaldee, and then, according to various authorities, to the authorship of the targum (interpretation or paraphrase) of the Pentateuch bearing his name, and the similar work called the *Five Megilloth*. The *Targum of Jonathan* was printed in Venice 1590-1, Bâle 1607, Hanau 1614; Amsterdam 1640, Prague 1646, and Vienna 1859; with English translation, London 1862; and the paraphrase on the prophets, first printed in Venice 1494, is now found in all rabbinical Bibles.

JONES, jōnz, ANSON, M.D.: 1798, Jan. 20—1858, Jan. 7; b. Great Barrington, Mass.: pres. of the republic of Texas. He received his medical education in Conn., was licensed to practice 1820, lived some years in Philadelphia, New Orleans, and in various cities of S. America; settled in Brazaria co., Tex., 1833, and at the beginning of the troubles between Tex. and Mexico became an enthusiastic advocate of colonial independence. He was a surgeon in the Texan army during the war, and after independence was achieved was a member of the Texan congress 1837-8, minister of the republic to the United States 1838-9, Texan senator 1839-40, sec. of state 1841-44, and pres. of the republic from 1844, Dec., till its annexation to the United States 1846, Feb. After the accomplishment of annexation—which he had strongly opposed—he engaged in agricultural pursuits.

JONES, EDWARD F.: manufacturer; b. Utica, N. Y., 1828, June 3. He removed to Mass. while a child; became col. of the 6th Mass. vols., which fought its way through Baltimore 1861; was subsequently col. of the 26th Mass. vols.; and was brevetted brig.gen. In 1865 he removed to Binghamton, N. Y., and established the scale works that he has since conducted. In 1885 and 88 he was elected lieut.gov. of N. Y. as a democrat.

JONES, jōnz, INIGO: English architect: abt. 1572-1651, July 5; b. London; son of a cloth worker. Of his early history little is known till the time when the Earl of Pembroke, attracted by his great aptitude at drawing, sent him abroad for four years to study the masterpieces of architecture in France, Germany, and Italy. While in Venice, he gave particular attention to the works of Palladio, whose style he introduced into England, whence we sometimes hear J. designated as the English 'Palladio.' In 1605, he was employed by James I. in arranging the scenery, etc., for the masques of Ben Jonson, then the chief amusement of the court. Jonson afterward satirized his fellow-laborer in *Bartholomew Fair*. In 1612, J. revisited Italy, still further to improve his style, and on his return to England was appointed surveyor gen. of the royal buildings. J. was at this time accounted the first architect of England, and according to some, the first of

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the age. The state of architecture in England during J.'s time was an excellent foil to his genius, as the praise bestowed on his works shows, but still in any age he would have ranked high as an architect. His masterpiece is considered to be the Banqueting House at Whitehall. Other works of his are the church of St. Paul, in Covent Garden, Ashburnham House, and Surgeons' Hall, which, however, are very mediocre.

JONES, JACOB: 1770–1850, Aug. 3; b. near Smyrna, Del.; naval officer. He was educated for a physician, became clerk of the supreme court of Del., and entered the U. S. navy as a midshipman 1799, Ap. 10; was promoted lieut. 1801, commander 1810, and post-capt. 1813; was captured in the frigate *Philadelphia* 1803, and held prisoner in Tripoli nearly two years; appointed commander of the *Wasp* 1811, captured the British brig *Frolic* 1812, Oct. 18, was himself captured with his prize by the British frigate *Poictiers* the same day, and taken to Bermuda; commanded the *Macedonian* 1813; and was subsequently in command of squadrons in the Mediterranean and Pacific. He received a vote of thanks and a gold medal from congress, and swords of honor from several states.

JONES, JOEL, LL.D.: 1795, Oct. 25–1860, Feb. 3; b. Coventry, Conn.; lawyer. He graduated at Yale 1817, studied law in Litchfield and New Haven; began practicing in Easton, Penn., was appointed a commissioner to revise the state civil code, became assoc. judge 1835, and afterward presiding judge of the Philadelphia dist. court, was the first pres. of Girard College 1847–49, and elected mayor of Philadelphia 1849. He was an accomplished linguist and theol. student, and published several legal and religious works.

JONES, JOHN, M.D.: 1729–1791, June 23; b. Jamaica (L. I.), N. Y.; surgeon. He was educated as a physician and surgeon in London, Paris, Leyden, and Edinburgh, was surgeon to Johnson's expedition against Crown Point 1755, prof. of surgery in King's (now Columbia) College 1767–76, associate of Dr. Samuel Bard in founding the New York Hospital 1771, retired to Philadelphia on the British occupation of New York, and there became physician to the Penn. Hospital, and vice-pres. of the College of Physicians 1787. He was the family physician of Washington and Franklin, and published *Plain Remarks upon Wounds and Fractures, designed for the Use of the Young Military Surgeons of America* (New York, 1775). This work was the chief authority for American field-surgery in the Revolutionary war.

JONES, JOHN PAUL: 1747, July 6–1792, July 18; b. Arbigland, in the stewartry of Kirkcudbright, Scotland; son of a gardener named John Paul. He became a sailor, was for a short time mate of a slaver in the W. Indies, but left in disgust, and afterward settled in Virginia, assuming the name of Jones. He ardently embraced the cause of the American colonies. When the congress, 1775, resolved to fit out a naval force, he offered his services, and

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Dec. 22, was appointed senior lieut. in the navy, and assigned to the flagship *Alfred*. After engaging in the New Providence expedition, 1776, Feb.-Apr., he was given command of the 12-gun sloop *Providence*, with which he made a six weeks' cruise between the Bermudas and Canso, captured 16 prizes, and did much damage to British shipping and fisheries. Returning from this cruise, he was appointed to command the *Alfred*, with instructions to break up the Cape Breton fisheries and capture the coal fleet. He sailed Nov. 2, partially succeeded in his mission, and returned to Boston with 4 prizes, Dec. 15. In 1777, Jan., he was transferred to the *Providence*, and in June was appointed by congress commander of the new 18-gun ship *Ranger*, in which he sailed for France, Nov. 1, arriving at Nantes, Dec. 2. He received special instructions from the American commissioners in Paris to distress the enemies of the United States by sea or land; sailed from Brest, 1778, Apr.; burned a brig off Cape Clear; made a bold attack on Whitehaven and an unsuccessful attempt to capture the Earl of Selkirk on his estate near Kirkcudbright, Scotland; captured the *Drake*, a vessel superior to his own in crew and guns; and May 8 returned to Brest with his prize and 200 prisoners—nearly double his own crew. He was then detached by the American commissioners from his ship at the request of the French minister of marine; the *Ranger* was sent to America, and J., through the unfulfilled pledges of the French minister, remained unemployed till 1779, Feb. At length his ambition to organize a flying squadron was partially gratified. The French minister appointed him to the command of the *Duras*, an old E. India merchantman that had been transformed into a war vessel with 42 guns, to which he was enabled to add six other vessels, two of them privateers. Changing the name of his flagship to *Bon Homme Richard*, in honor of his constant friend, Benjamin Franklin, he sailed from Lorient with his 7 vessels, Aug. 14. Within a month he had spread great alarm along the English coast, had captured or destroyed 26 vessels, and had run up the Forth and was about seizing the shipping of Leith when a sudden gale drove him out to sea. Learning that a fleet of English merchantmen from the Baltic was daily expected off the coast, he gathered his squadron off Flamborough Head, and quietly awaited its appearance. About noon, Sep. 23, he sighted the merchant fleet of 41 ships under convoy of the *Serapis* of 44 guns, and the *Countess of Scarborough* of 28, standing out from under the Head and bearing down toward the Straits of Dover. J. ordered a general chase. The merchantmen sought refuge by running inshore under the protection of the guns in Scarborough castle. J.'s fastest vessel, the *Alliance*, commanded by a French officer, was the first to approach the British men-of-war, but as soon as their character was determined the *Alliance* stood off from land. At 7:30 o'clock, J. in the *Richard* came up with the *Serapis*, and opened a heavy cannonade. A part of his battery was soon rendered useless, and after a few broadsides both ships became fouled. As the *Serapis* began to lower an anchor to work

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clear of the *Richard*, J. personally assisted in lashing the jib-stay of the *Serapis* to the mizzen-mast of the *Richard*, and thus with sides touching, each ship discharged all her available guns against the other. The terrific fight lasted about three hours; J. repelled a boarding party; the *Serapis* struck her flag; and the *Richard*, on fire in two places, was abandoned and sank early the next morning. While this encounter was in progress, the *Countess of Scarborough* surrendered to the *Pallas*, the capt. of the latter requested the French capt. of the *Alliance* to take his prize that he might assist the *Richard*, and the *Alliance*, from the supposed jealousy of her capt., fired several broadsides of grape into both the *Serapis* and the *Richard*. J. took his prize to Texel, Holland, was given a gold sword and the order of merit by the king of France, voted the thanks of the American congress, and chosen by the congress commander of the ship-of-the-line *America*, then building. In 1788 he entered the Russian service with the rank of rear-admiral and promise of command of the fleet in the Black Sea; but through court intrigues he failed to obtain independent command, and retiring to Paris, died in poverty while an appointment to be commissioner and consul of the United States at Algiers was on its way to him. His funeral was attended by a deputation of the legislative assembly.

JONES, NOBLE WIMBERLY, M.D.: 1724-1805, Jan. 9; b. near London, England: American patriot. He accompanied his father, Dr. Noble J., to Savannah while a child; was associated with him in the practice of medicine there 1748-56; became a militia officer, member of the Ga. assembly 1761, and its speaker; was delegate in the congress 1775-6, 1781-83, taken prisoner at the capture of Charleston 1780, and exchanged 1781; practiced medicine in Philadelphia 1781-2, Charleston 1783-88, and afterward in Savannah; and served in the Ga. assembly, and as pres. of the convention that revised the state constitution 1795.

JONES, OWEN: 1809-1874, Apr. 19; b. London: architect and decorator. He served apprenticeship six years in the office of a London architect, spent four years in travel in Italy, Greece, Turkey, Egypt, and Spain, making a special study of the Alhambra in Granada, and engaged in professional work in London 1836. His first publication was the great *Plans, Elevations, Sections, and Details of the Alhambra* with Gayangos's translation of Arabic inscriptions (London, 1st ed. 1836-42; 2d ed. with 101 plates 1847). In 1851 he was one of the supts. of works for the London exhibition; and decorated the interior of the vast exhibition building in Hyde Park, and of the Crystal Palace at Sydenham, where he designed and arranged the Egyptian, Greek, Roman, and Alhambra courts. He also designed and erected St. James's Hall, Piccadilly, decorated the palace of the viceroy of Egypt at Gesch, and designed the illuminations of the Book of Common Prayer. He received the royal medal for architecture 1857, and a diploma of honor at the Vienna exhibition 1873.—His father, OWEN J. (1741-1814). was a noted Welsh antiquary

JONES—JONESBORO.

who published *Myvyrian Archaeology of Wales*, 3 vols. (London 1801-07).

JONES, Sir WILLIAM: 1746, Sep. 28—1794, Apr. 27; b. London: distinguished linguist and oriental scholar. He was sent to Harrow 1753, where he soon eclipsed all his fellows, particularly in classical knowledge. In 1764, he was entered at University College, Oxford. In 1765 he left Oxford, to become tutor to the eldest son of Earl Syencer, with whom he remained five years. In 1770 he published at the request of the king of Denmark, *Life of Nadir Shah*, translated into French from the Persian; in the following year, a *Persian Grammar*, republished some years ago, with corrections and additions, by Prof. Lee; and 1774, *Commentaries on Asiatic Poetry*, republished by Eichhorn at Leipsic, 1776. In 1780, he completed a translation of seven Arabic poems, known as the *Moallakat*, which obtain their collective name from being 'suspended' in the temple of Mecca; wrote an essay *On the Legal Mode of Suppressing Riots*, and another entitled *Essay on the Law of Bailments*, and two or three odes. In 1783, Mar., J. obtained a judgeship in the supreme court of judicature in Bengal, and landed at Calcutta in September, having also received the honor of knighthood. He at once set about the acquisition and promulgation of the knowledge of oriental languages, literature, and customs. He established the Royal Asiatic Soc., 'for investigating the history, antiquities, arts, sciences, and literature of Asia,' of which he was the first president. To the volumes of the *Asiatic Researches*, Sir William contributed largely. Besides these, he wrote and published a story in verse, *The Enchanted Fruit, or the Hindu Wife*; and a translation of an ancient Indian drama, called *Sacontala, or the Fatal Ring*. A translation by him of the Ordinances of Menu (q.v.) appeared 1794. He was busily employed on a digest of the Hindu and Mohammedan laws, when he was attacked with an inflammation of the liver, which terminated fatally. The E. India Company erected a monument to his memory in St. Paul's Cathedral, and a statue in Bengal. He had vast learning, knowing well thirteen languages, and twenty-eight others partially. As a writer he had not the originality that pertains to genius. A complete edition of his works, 6 vols. 4to, was published by Lady Jones 1799; and another appeared, 13 vols. 8vo, 1807, with a life of the author by Lord Teignmouth.

JONESBORO, BATTLE OF: 1864, Aug. 31, at Jonesboro, cap. of Clayton co., Ga., 20 m. s. of Atlanta; between a Union force under Gen. Oliver O. Howard, detached from Gen. Sherman's army, and a Confederate force under Gen. William J. Hardee of Gen. Hood's army. The object of the Union forces was to compel or at least hasten the evacuation of Atlanta by seizing the Macon and Western railroad at Jonesboro. Hood became aware of Sherman's design, and sent Hardee to oppose Howard's attempt. Howard reached the railroad first and intrenched. As soon as Hardee came up, he attacked Howard, and after

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an engagement of two hours he withdrew with a loss of 1,400 in killed and wounded. The Union loss was comparatively slight on account of the intrenched position. Atlanta was evacuated Sep. 1.

JONESIA, *jō-néz'ī-a*: genus of trees of nat. ord. *Leguminosæ*, sub-ord. *Cæsalpinieæ*, having a two-leaved calyx, a funnel-shaped, 4-tild corolla, seven stamens attached to a ring which springs from the tube of the corolla, a scimiter-shaped pod. The leaves are abruptly pinnate. The *Asoca* of Sanskrit poetry (*J. Asoca*) is one of the loveliest trees of the East. Its orange and crimson flowers grow in graceful racemes. Indian poetry abounds in its praises.

JÖNKÖPING, *yön'chō-pīng*: province or län in s. Sweden; bounded n. by Östergothland, e. by Kalmar, s. by Kronoberg, w. by Elfsborg and Halland; 4,298 sq. m. cap., J., a town on Lake Wetter (pop. 11,751). Parts of J. are very mountainous and yield valuable timbers and large quantities of iron; others are fertile, watered by Lake Wetter and the Nissa and Em rivers, and produce various cereals, hemp, flax, and potatoes abundantly. Pop. (1872) 181,788; (1888) 195,045; (1890) 193,703; (1901) 203,746.

JÖNKÖPING, *yön'chō-pīng*: capital of a lan or province in Sweden, in a beautiful situation at the s. end of Lake Wetter, backed by hills. It is a place of much manufacturing industry: its safety-matches being used throughout the world: 1870-80 the value of matches made reached \$750,000. Machinery, perfumes, cigars and snuff are made. Pop. (1880) 16,147; (1888) 19,496; (1901) 23,519.

JONQUIL, or **JONQUILLE**, n. *jōn kwīl* [*F. jonquille*, a jonquil—from Sp. *junquillo*—from *L. juncus*, a rush]: a species of *Narcissus* (q.v.) or daffodil, having long lily-like leaves and spikes of yellow or white flowers. The COMMON J. (*N. Jonquilla*), native of s. Europe, is one of the most common bulbous-rooted plants in flower-borders. It has from two to six yellow flowers at the summit of its scape (leafless stem). It is of nat. ord. *Amaryllidaceæ*. The SWEET-SCENTED J. (*N. odoratus*), also native of s. Europe, is another species generally cultivated. Perfumed waters are made from J. flowers.

JONSON, *jōn'son*, BEN: English dramatist: 1573-1637. Aug. 6; b., according to the most probable accounts, at Westminster (though one authority says Warwickshire). He usually abbreviated his Christian name, and it so appears in his famous epitaph. The Scottish poet Drummond of Hawthornden, states that J. told him his grandfather was a Scotchman of Annandale, who settled in Carlisle, and his father a clergyman, who died before Ben was born. The latter received his education at Westminster school, where he had for his preceptor the illustrious Camden. Little is known of his career from this point until the period when he became famous as an author. It is said that his mother took a second husband, a bricklayer (but this is doubtful), and that Ben was forced to assist his stepfather. The story of his residence (for a few months) at St. John's College, Cambridge, may be an authentic tradi-

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tion, but it really rests on no better evidence than the present of some books now in the library of that college with his name inscribed on them. If he went thither at all, he soon returned home for lack of means; but his antipathy to the trade of a bricklayer was so great, that he finally ran off, and served as a soldier in the Low Countries. After coming back to England, he tried the profession of an actor, but did not succeed, whereupon he started as a writer for the stage. Even in this capacity he did not rapidly acquire reputation. The first piece that procured him a name was *Every Man in his Humor* (1598). The best of his subsequent productions are *Volpone, or the Fox* (1605), *The Silent Woman* (1609), and *The Alchemist* (1610). These are comedies full of rich, dry, carefully-elaborated 'humor.' He also composed two tragedies, *Sejanus* (1603) and *Catiline's Conspiracy* (1611), on which he—but only he—set a high value. His *Masques*, written for the courts of James and Charles, are occasionally very graceful. For many years J. was in receipt of a pension from these monarchs, but his careless and profuse habits involved him constantly in difficulties, and he died in poverty. J.'s writings are not much relished now, and never were, even in his own day. There is an air of pedantry about his happiest efforts that spoils their effect. Yet, on the other hand, he has a rude force, and a humor which, if heavy and saturnine, is also genuine and pungent. Occasionally, too, his lyrics show a lightness and delicacy almost inexplicable, considering the ordinarily cumbrous movement of his faculties. The influence which he exercised over the wits of his time is a proof of the general strength and talent of the man. Shakespeare alone was reckoned his match in those wit-combats held at the Mermaid Tavern. He was self-reliant, passionate, combative, far from regular in life. He was an immense drinker, and his potations do not seem to have improved either his temper or his constitution. The best edition of his works is that by Gifford, accompanied by a biographical memoir (Lond. 9 vols. 1816; new ed., with introd. and appendices by Lieut. Col. F. Cunningham, 1875, Bickers and Son).

JOODPOOR', or MAR'WAR: see JOUDPORE.

JOONAGHUR, *jô na-gŭr'*: town of India, province Gujerat, on the peninsula of Kattywar, 235 m. n.w. of Bombay. It is advantageously situated on a ridge of sandstone, is surrounded by walls five m. in circumference, and has a citadel and a mosque. The town is ill built and dirty, and only about a half of the space within the walls is occupied. The trade is insignificant. Pop. variously estimated 5,000 to 30,000.

JOONPOOR', or JAUNPOOR': see JAUNPUR.

JOPLIN, *jôp'lin*: city in Jasper co., Mo.; on the Kansas City Fort Scott and Gulf and the J. and Girard railroads; 8 m. s.s.w. of Oronogo, 14 m. s.w. of Carthage, 36 m. s.e. of Girard, Kan., 170 m. s. of Kansas City. It contains a high and several graded schools, 3 churches, daily and weekly newspapers, 2 nat. banks (cap. \$200,000), 1

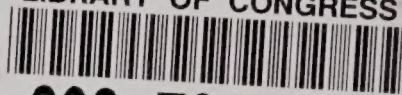
JOPPA.

private bank, and 1 state bank. The remarkably rich lead and zinc mines, give employment to 26 smelting furnaces, yielding an average of 15,000,000 lbs. of pig-lead and 10,000,000 lbs. of pig-zinc annually. Pop. (1900) 26,023.

JOPPA, *jöp'a*: name in the Greek of the New Testament of a town called in Hebrew *Yafo*; modern, *Yafa* or *Jaffa*, i.e., beauty. It is on the sea-coast of Syria, about 33 m. n.w. of Jerusalem, and, according to Stanley, still deserves its name. J. is of great antiquity. Here, according to the classical myth, it was that Andromeda was chained to the rock, and exposed to the sea-monster; a story that has been supposed to shadow out in an obscure way the early intercourse between Greece and Syria. In sacred history, it appears as the port of Jerusalem in the time of David and Solomon. It was at J. that the Apostle Peter saw the vision which corrected his Jewish prejudices concerning the Gentiles and the spirit of Christianity. In the reign of Constantine the Great, J. was made a bishop's see, but it attained its highest prosperity in the times of the Crusades, when it became the principal landing-place of the warriors of Christendom. In 1799, it was stormed by the French under Bonaparte, and here was perpetrated his shameful massacre of Turkish prisoners. In 1832, Mohammed Ali made himself master of it; but the Turks, with the assistance of the British and Austrians, took it from him again 1840. The imports have a value of more than \$500,000 a year; the exports (soap, grain, and oranges), about \$1,000,000. J. contains English, French, German, and U. S. consulates. Since 1869, a German colony has been established here, and has built two villages near the town. Pop. of J. abt. 23,000; of which abt. 5,000 are Christians, 1,000 Jews.

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